THE RUBBER AGE AND TIRE NEWS

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THE RUBBER AGE AND TIRE NEWS

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Recommended Specifications For Rubber Stoppers*

This specification is issued in response to requests from users of rubber stoppers suitable for use by the general public as standards of quality and performance for the technical control of the purchase and testing of such stoppers.

In formulating these specifications the Bureau of Standards has sought to utilize all sources of information including numerous consultations with manufacturers of stoppers and conferences with users. The finished draft was submitted by the Bureau to experts in this field for suggestion and criticism with a view to revision.

On the basis of service and experience and the results of laboratory investigations, this specification will be revised from time to time. In such revision the point of view of all concerned: the user, the testing laboratory, and the manufacturer, will be carefully considered and suggestions are invited and will be welcomed from any source.

Standards of Measure, Quality and Performance

Material—Rubber stoppers shall be made of uniformly compounded rubber, in the manufacture of which no ground rubber, nor ingredients known to the rubber trade as oil substitutes shall have been used. High grade reclaimed rubber may be used.

They shall be made from and have all of the characteristics of a compound which will show on analysis at least 65% by volume of rubber hydrocarbon; not more than 1% of free sulphur and not more than 1% of alcoholic-soda extract.

Measurements.—The diameters of top and bottom shall not vary more than 5% from the measurements given in the table.

DIMENSIONS OF RUBBER STOPPERS

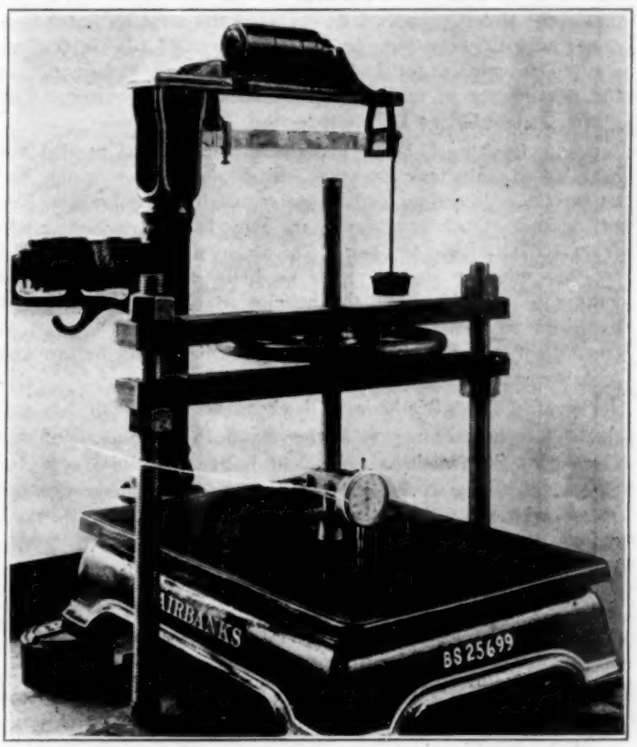
Number	Diameter of Top	Diameter of Bottom
	mm.	mm.
00	14	10
0	17	12
1	18	15
2	20	16.5
3	23	18
4	25	20
5	27	23
6	32	26
7	37	30
8	41	33
9	45	37
10	50	42
11	56	50
12	65	59
13	70	60

Compressibility—A number 2 stopper shall be submitted for a compressibility test as follows:

A load of 50 pounds shall be applied and the change in its height shall be recorded as the compression. The stopper shall have a compression of not less than 6.35 mm. (0.25 inches) and not more than 8.89 mm. (0.35 inches).

Resistance to Steam—A number 2 stopper shall be suspended in an atmosphere of steam at 100°C for five days. It shall be allowed to rest at room temperature for twenty-four hours before making the following measurements and tests. The height of the stopper and the diameters of top and bottom shall not have changed more than 10%. The compression shall not vary more than 1.02 mm. (0.04 inches) from the compression determined on the untreated sample (Par. C).

Resistance to Acid—This test is to be applied only to those stoppers which are to be used in contact with acid. Stoppers in this group shall satisfy the above requirements and in addition shall be of such composition that when a number 2 stopper is heated on the steam-bath for thirty minutes in a 15% solution of hydrochloric acid it shall meet the following conditions:



APPARATUS USED IN COMPRESSIBILITY TEST

1. There must not be more than traces of dissolved material in the acid.
2. After having been washed thoroughly with hot water and completely dried, the diameters of top and bottom shall not have changed more than 10%.
3. The compression (Par. C) on this washed and dried sample shall not vary more than 1.02 mm. (0.04 inches) from the compression determined on the untreated sample (Par. C).

Tests for Acceptance

Sampling—On all orders for rubber stoppers, the manufacturer or dealer shall submit for test, one-half dozen number 2 solid stoppers. In case stoppers with one or more

* From the Bureau of Standards, Washington, D. C.

holes or of different sizes are ordered, the stock of which they are to be manufactured shall be made up in number 2 solid stoppers and one-half dozen of these submitted for tests. The results of test on these samples shall be taken as representing the delivery.

Physical Test Methods—Compressibility Test—Definition—The compressibility when specified for rubber stoppers shall represent the change in height of a number 2 solid stopper which is caused by the application of a load of fifty pounds to the flat surface of the sample.

Testing Machine—The machine used for this test shall fulfill the following requirements: (1) The scale for indicating the applied load shall be accurate within 0.25 lb. for fifty pound load. (2) The pressure shall be applied uniformly, and be equally distributed over the active surface of the sample. (3) The micrometer which is to be used for measuring the change in height shall be accurate to .0254 mm. (.001 inches).

Apparatus Necessary for Making Test

The Bureau of Standards will utilize the arrangement pictured here to determine compressibility. The load is imparted to the stopper by means of the downward thrust of the screw, and is increased slowly until the scale indicates that a pressure of fifty pounds has been applied. This is then allowed to remain for two minutes, and then measuring on the micrometer in millimeters (or inches) is required. The result is reported as the compression.

Steam Resistance Test—The steam test shall be carried out in a small autoclave or other suitable container which has temperature recording and steam regulating attachments. The temperature must not vary more than 5 degrees Centigrade from 100°C during the test. The stopper shall be suspended by fine wire or thread, with as little compression on the rubber as possible. At the conclusion of the five days of exposure to steam, the sample must be allowed to rest at room temperature for at least twenty-four hours before any measurements are made.

Chemical Test Methods—All chemical tests shall be conducted in accordance with the standard procedure of the Bureau of Standards as given in "Instructions to Bureau of Standards Chemists for Routine Analysis of Rubber Goods" (August, 1919).

Calculations—Rubber Hydrocarbon—Calculated by difference. Subtract from 100% the sum of the following:

Chloroform Extract.
Alcoholic Potash Extract.
Acetone extract, sulphur free.
Ash, sulphur free.
Total Sulphur.
Free Carbon.

The figure thus obtained is called rubber hydrocarbon by difference.

Rubber as Compounded—Rubber as compounded is taken as 105% of the rubber hydrocarbon by difference.

Rubber by Volume—The percentage of rubber as compounded is multiplied by the specific gravity of the compound and divided by 0.94. The result expresses the percentage of rubber by volume.

Interpretation of Specifications

Interpretation of Specifications—Units, standards, and methods of measurement, unless otherwise prearranged, shall be in accordance with those accepted or recognized by the Bureau of Standards.

In case of dispute, the Bureau may be appealed to for a decision on such points as cannot be agreed upon by the parties concerned.

German Reclaimed Rubber

Reports emanating from Germany during the progress of the war were to the effect that the country, unable to import raw materials by reason of the blockade, had worked wonders in the field of reclaiming materials. In view of the fact that crude rubber could not be obtained one would easily imagine that the Germans had gone far in the reclamation of waste rubber and had produced a considerable amount. Such, however, was not the case and the results obtained along those lines were comparatively unimportant.

An interesting review of the reclaimed rubber business in Germany, before and during the war and of its prospects in the future recently appeared in the form of a small pamphlet issued by the Runge Werke A. G. (formerly M. Frankel and Runge) of Spandau. This concern is regarded as the largest in Germany devoted to the reclaiming of rubber and accordingly its progress may be taken as an excellent indication of the progress of industry as a whole.

The exact figures for each year's production of the firm are given. It states that in 1912 the pre-war maximum output of reclaimed rubber was attained which totalled 841 tons; in 1914 the output was reduced to 495 tons; in 1915 it was 551 tons, in 1916 it rose to 769 tons, 1917 showed 890 tons, while a total of 974 tons was reached in 1918. These figures do not show anything abnormal but would rather indicate that the Germans did not make the most of their opportunities created by the shortage of the raw material.

With respect to the future of the industry, the pamphlet states that the demand for reclaimed rubber has increased steadily and that the prospects for greater business are such that the firm expects to be employing over a thousand hands within a few years. It is also stated that the home consumption of the product will be exceedingly large in the immediate future. The firm also predicts that in the light of experience the amount of crude rubber required to produce a given amount of rubber goods will be approximately one-half the amount needed prior to 1914. In order to effect this, however, it is stated that it will be necessary to import rubber scrap as well as to forbid its exportation.

Belden Issues New Bulletin

The Belden Manufacturing Company, of Chicago, has recently issued a booklet entitled "Bulletin No. 1214 on Winding Machines." This bulletin, which is issued in advance of the firm's Catalog No. 8, shows a number of new winding machines which the firm has not previously listed and which have been developed for use by the trade. Illustrations and full description of the nature and operations of the machines as well as prices, are given.

Typical Graphic Records

"Typical Graphic Records" is the name of a booklet recently issued by The Esterline Company, manufacturers of curve-drawing instruments, of Indianapolis, Ind. The booklet, which contains twenty-four pages, gives complete descriptions of many of the instruments made by the company and in addition gives a number of graphic records made by these instruments in action. The purpose of the booklet is, in short, to give the firm's customers, real and prospective, a close-up picture of the results which are being obtained by users of the instruments in a large number of different plants and under widely varying conditions.

Zelnicker Issues Bulletin

Walter A. Zelnicker Supply Co., of St. Louis, Mo., have issued their latest bulletin No. 270 which contains 56 profusely illustrated pages describing machinery for power and industrial plants. The bulletin also contains descriptions and prices of crayons which are used in the rubber industry.

Better Cotton Through Seed Selection

By E. C. Ewing

In discussing some of the results that have been accomplished in the improvement of cotton and some of the problems involved in securing better cotton through seed selection, I shall deal with American conditions. Problems of other countries are, of course, different in many ways and require familiarity with local conditions. Their solution necessarily demands an understanding of those peculiar conditions as thoroughly as possible, and then the application of fundamental biological principles. These are practically the same everywhere. The problems which I shall discuss may therefore, be regarded as typical, in a sense, of what may be encountered in any country. Before discussing present day problems of cotton improvement, it may be interesting to recall some of the achievements that have already been secured.

The classic example in America is that of Sea Island cotton. From a tropical plant bearing lint which would only be considered medioere by comparison with the best modern staples, the Sea Island growers have developed their cotton to the present standard of excellence.

The production of the finest staple became specialized to the islands off the coast of South Carolina and for years their cotton, ranging in length of staple from two to two and one-half inches, was recognized as the finest cotton fibre grown anywhere. The famous crop lots, the cream of the island product, have long come from plantations where seed selection aimed at the finest and longest staple has been practiced for generations. The fibre has not been the only feature to which the Sea Island breeder has had to give his attention.

To begin with, when Sea Island cotton was first introduced to the United States from the West Indies about 1786, the plant was perennial and quite different from its present habit and form. By persistent selection of the earliest, most compact, and productive types that appeared, the annual habit was established and the productiveness and the quality enhanced. Another requirement that had to be met by the Sea Island breeders was that of securing resistance to the cotton wilt disease. The leader in the establishment of wilt resistant strains was Colonel E. I. Rivers of James Island. He developed a splendid type that was almost immune to the disease and which bore excellent lint.

Egyptian Cotton in America

In the Salt River and Imperial Valleys of Arizona and California we now have a well established cotton growing industry based directly on the successful results of seed selection. In those regions there are now growing thousands of acres of Egyptian cotton, planted with varieties developed in America approximately within the last decade.

In 1902, experiments were begun by the United States Department of Agriculture in the growing of Egyptian cotton in Arizona. The results were rather unpromising at first, mainly because the imported varieties of Egyptian cotton, as grown in the new region were unsatisfactory. In 1908 a new type was segregated from other selections which has since become the basis of the Egyptian cotton industry in the Southwest. This new variety, which originated from a single plant of Mitafifi Egyptian, named Yuma, was a distinct improvement on the imported variety. It was earlier, more productive, and uniform; the staple was longer and more regular. Not until 1912, when a supply of seed of this new variety sufficient to plant about 200 acres had been produced and its merits had been proved, was the commercial culture of Egyptian cotton recommended by the Department of Agriculture.

Later the Pima variety was isolated by selection from the Yuma and is an improvement over the latter. These two varieties developed by Mr. Kearney and his associates, of the Department of Agriculture, constitute practically the entire American-Egyptian crop. The production amounted to over thirty-si thousand bales in 1918, and the prospects are that the culture of this cotton will be considerably extended. In the testing of these new varieties, field trials were supplemented by spinning tests and the superiority of the new sorts both from the agricultural and the manufacturing standpoint was ascertained.

Short Staple Upland Cotton

From the agricultural standpoint there has been great improvement during the last ten or twelve years in the character of the cotton planted throughout the South. Formerly, only a small portion of the cotton acreage was planted with seed of recognized variety; the bulk of the crop was just cotton. Now the reverse is true. A number of superior varieties have been developed and, as a part of the general improvement in farming methods, the extensive adoption of better varieties has occurred. Still a great many of the varieties grown are inferior.

Variety tests made by the Experiment Station in each state through a series of years have demonstrated that many kinds of cotton ordinarily considered good are much less productive than some of the really superior varieties available. The loss in production from this planting of inferior sorts of cotton is immense. Ayers of the Arkansas Station figures that the general planting of good varieties would increase the value of the cotton crop of the South by two hundred and thirty million dollars annually.

Some of the best varieties have been found adapted to the wide areas of culture. In Texas and Oklahoma, the Triumph variety, developed by A. D. Mebane, a Texas farmer, has probably been the leading variety in the last ten years. Lone Star, which is a more recent variety and of the same, big boll, stormproof type, was originated by D. A. Saunders of the Department of Agriculture, and is also very popular in the same territory. These two varieties are exceedingly well adapted to the western portion of the Cotton Belt and in that territory are perhaps grown more generally than all other kinds of cotton combined. In the states east of the Mississippi River the Wannamaker-Cleveland variety is now probably more extensively grown than any other one cotton. This is a very productive short staple variety which has been developed in the past few years by approved systematic methods of breeding.

Exceedingly valuable results have been achieved in selecting cottons resistant to the wilt disease. In certain sections, particularly in the sandy soils of the southeastern States, this disease has become so serious that ordinary varieties of cotton could not profitably be grown there. Through selection of the most resistant plants, growing in wilt infected fields, some very valuable varieties have been developed by experts of the Federal Department of Agriculture and of the State of Georgia. In addition to being highly resistant to disease, some of these new varieties are rather early and productive. Their introduction has made it possible to continue cotton culture in a considerable area where, without wilt resistant varieties, cotton growing would necessarily have been abandoned.

This type has received more attention in the matter of seed selection than short staple. The pioneer in the development of superior sorts of Upland long staple cotton was the late J. B. Allen, of Port Gibson, Mississippi, originator of the

Allen long staple variety. Mr. Allen started with a stock of cotton which he originally obtained in Louisiana. The staple of this cotton was about one and one-fourth inches. By selection he produced, about 1880, the well known Allen cotton which frequently pulled one and one-half inches or better. This variety was the foundation stock of practically all of the extra staple cottons which were grown extensively throughout the section bordering the Mississippi River until a few years ago, when a combination of boll weevil depredation and economic conditions practically caused the abandonment of this class of cotton.

The culture of Long Staple Upland cotton in the southeastern States, particularly South Carolina, is based on varieties developed in that territory by scientific methods of selection. The first of these cottons was Columbia, originated about 1902 by Dr. H. J. Webber, at that time of the Department of Agriculture. Webber cotton, which was derived later from the Columbia and introduced by D. R. Coker, was an improvement over the latter variety. It became very popular in certain sections of the southeastern States and, to some extent, in the Delta as well. The Cokers, by introducing the Webber, Hartsville, and other long staple cottons and by maintaining a gilt edged establishment for supplying pure seed of their varieties, have rendered splendid service to the cotton industry. Their efforts and influence have greatly promoted the development of the new long staple cotton culture in the southeastern States.

Boll Weevil Influences Cotton Breeding

The boll weevil has had the greatest influence on and has supplied the principle motive for cotton breeding work in the last ten or fifteen years. This pest has especially emphasized the importance of earliness in cotton. As a rule, the number of weevils is small in early summer, at the beginning of the fruiting season. In the usual course of events, they increase in numbers more or less rapidly as the season advances, but with the rate of increase depending largely on weather conditions.

At first the amount of infestation is not sufficiently great to cause serious damage. Late in summer or in early fall the weevils may become so thick that their depredations prevent any further setting of on the plant. The result is that the weevil shortens the effective season of the cotton plant. The all important requirement then is to make the crop in as short a time as possible, or to get as much fruit set on the plant as possible early in the fruiting season, before weevils become very numerous.

While there is still room for improvement of our Upland short staple cotton the requirements have been much more effectively met in this class than in the longer staple class. Although short staple Upland cotton constitutes more than ninety per cent. of the present product there is no great concern over the question of supplying satisfactory short staple varieties. The modifications required in short staple types have not been so great as in the case of the long staple varieties. In fact, fairly satisfactory short staple varieties have already been in existence for some time and have been adopted in boll weevil territory. The problem of improving the other 5 per cent. or 10 per cent. of the crop, which must be depended on to supply the trade with cotton ranging from an inch and an eighth upwards, is distinctly more acute.

The older long staple varieties like Allen and the old "Bender" cottons of about an inch and an eighth were too slow in fruiting and too late in maturing for successful culture under boll weevil conditions. Although formerly grown extensively in the Delta, or alluvial region along the Mississippi River, these late types have been practically discarded in all sections where the boll weevil has to be reckoned with. There is an urgent demand for satisfactory new varieties with at least a moderate length of staple to take the place of those types which have been discarded.

The question of improving long staple cotton is much more complicated than in the case of short cotton. In the latter instance the problems are principally agricultural and are centered almost entirely on improving characters which promote productiveness. So long as the staple does not fall below a minimum length of about seven-eighths to one inch, the primary markets for Upland short staple, as a rule, pay no regard to the quality of the lint. The attention of one who is trying to improve short staple cottons, therefore, may be centered primarily upon qualities which promote high yield per acre. In long staple work, on the contrary, the length and character of the lint must be as fully taken into account as the question of yield. The problem is complicated to that extent, but is none the less interesting.

My own experiments in seed selection which are being conducted in the Mississippi Delta, as well as the efforts of the Mississippi Experiment Station, are being directed principally towards the development of satisfactory cottons with some length of staple for culture under boll weevil conditions. We are interested in fine cottons of all lengths, but the most urgent need in our section is for satisfactory cotton of one and one-eighth to one and three-sixteenths inch staple. Our principal efforts are being put on that class of cotton and there our most promising results have been secured. We are not entirely neglecting the extra staples nor even short staple cotton, however.

For the past few years the demand for staples of one and an eighth to one and three-sixteenths has been fairly well supplied in the Delta principally by the planting of Express Cotton. This striking new type was propagated from an individual plant selected in 1904 by Dr. D. N. Shoemaker of the Department of Agriculture. In North Texas, where it originated and was tested for several years, it was not at all liked. The variety was discarded by the Department of Agriculture and barely missed becoming extinct.

Suspecting that this type of cotton might have considerable merit in the Mississippi Delta, I secured about one peck of seed of the discredited variety which was planted at the Mississippi Delta Branch Experiment Station in 1911. The cotton proved very promising at once and efforts to trace down more seed from several bales which had been grown in Texas the previous season proved futile. All of the Express Cotton subsequently planted on hundreds of thousands of acres came from that peck of seed.

Express Variety Becoming Popular

Express came nearer than any other available variety towards meeting the demand for a long staple cotton which could be depended on to produce a fair crop under boll weevil conditions. It has since become quite popular and within the last year or so has perhaps been grown more extensively than any other variety in the Delta region of Mississippi, if perhaps, we include the extreme northern end of that territory.

In spite of its popularity the Express variety has some serious defects. While the plant grows well in the Delta region, it is not sufficiently productive. We have been comparing different varieties of cotton as to yield and value per acre for a number of years. As a result of these variety tests we find that, through a series of years, the best short staple cotton will give us a larger profit per acres than Express or any other long staple variety. Long staple cottons, to be dependably profitable year after year, should be more of a staple product. Or else the premium over short staple prices, to be paid for longer cotton, must be stabilized at a higher average value, and the extreme fluctuations in the amount of the premiums must be avoided. The latter problem is a commercial one which has been present for a long time, but on which the trade has made no impression. The other alternative, that of increasing the productiveness of longer cotton relative to short staple cotton, is a task to be undertaken through seed selection.

In our experimental work we have attacked the problem in two different ways. In each case, Express Cotton, which has about the right length of staple for our needs, has been used as a basis for our work.

In speaking of several sorts of cotton, I have already stated in each case that the new variety has descended from a single exceptional plant discovered in the field and isolated from the general population. That has been the mode of origin of practically all of the commercial varieties of cotton. This method has been employed with Empress Cotton and by selecting and testing numerous rather distinct types, several new strains of Express have been established and introduced. These new strains have shown improvement in one way or another over the original variety, but the advantage has not been sufficiently great and we have not been entirely satisfied with the results.

Still another method of improvement was open to us. The application of modern principles of heredity to practical work has helped to explain and has simplified many of the breeder's problems. On the basis of these principles we have gone at our cotton breeding problems by crossing certain varieties each separately possessing desirable qualities which were lacking in the other but which we wished to combine in a new type. The Express variety, carrying a fair staple, has been used as one parent in several crosses.

As I have already stated, the chief defect with Express Cotton is the low yield of lint. This low yield is due principally to a low percentage of lint. That is, the ratio of lint to seed cotton is low. As compared with short staple, the long staple cottons invariably give a lower lint percentage and this factor principally accounts for their relatively small yield.

But the Express variety possesses certain very valuable qualities. In addition to the length of staple, it is early, it fruits rapidly, producing many flowers and setting many bolls within a given period during the fruiting season. In this respect it is a good variety from the boll weevil standpoint. The problem then was to produce a type with larger bolls and with a higher lint percentage. For the other parent certain short staple varieties, having these qualities in a high degree as well as having other desirable characters, were crossed with Express. Subsequently we have isolated some very promising types from the mixed populations which results from the crosses. Through selection and testing, these hybrid strains have proved fixed in type and their merit, as compared with standard varieties, has been demonstrated. It has not been possible, of course, to achieve the ideal result of transferring, unaltered, the best qualities of each parent to the new type and of completely excluding the undesirable features. For instance, it will never perhaps be possible to develop by hybridization a type with very long staple and high percentage of lint. But this correlation can be and in our experiment has been broken to some extent.

New Varieties with Long Lint

We have produced two or three types which have nearly, if not quite, as long lint as the Express parent, but with very much higher lint percentages, though not as high as the short staple parent. What we have lost in lint percentage, as compared with the short parent, however, has been offset by a gain in the number of bolls. The lint yields of the new hybrid forms proved last year to be practically as good as the lint yield of the short staple parent. At the same time, the length of staple of the longer new types is nearly, if not fully, as good as the Express parent and, naturally, worth several cents a pound more than a short staple.

When a certain combination of characters is desired in a new type the most favorable method for securing the combination is by hybridization of varieties which possess the characters separately. The surest method is to figure the problem out in advance on the basis of genetic principles and then work the plan. If we depend entirely on the selection of variations which appear in existing varieties, then we must depend on nature to produce the desired heritable variation and the selector must chance to discover it. The odds are too strong against the success of such an undertaking where the form sought is a radical departure from any available type already in existence. It is true that most of our commercial varieties have originated in this way. Most of them have been introduced by farmers. In the list of short staple varieties, however, with few exceptions, the named varieties within any distinct group are not very different.

Most of the progress in the improvement of cotton in the future should be expected to come from specialists working systematically at the problem in state and government institutions or working through private agencies.

Qualities to Be Sought and Difficulties Involved

The difficulties involved in the development of new varieties are numerous and progress is necessarily slow. There is so much that we would like to have in a new variety of cotton that a great many factors must receive attention. For example, if we are working with long staple cotton, the negative correlation between length of staple and percentage of lint which I have already mentioned is sure to complicate matters for the breeder. No matter whether we are working on long or short staple cotton, a certain degree of resistance to plant diseases, particularly cotton wilt and boll-rot diseases, must be maintained. Bolls must be large and relatively stormproof, but easily picked. The plant must flower rapidly and the bolls must develop and mature in a relatively short period, for boll weevil conditions.

These are some of the qualities desired by the grower. Since cotton is grown to be spun, we must consider the qualities which interest the spinner, especially if we are dealing with long staple cotton. In addition to the length of staple, the spinner wants his cotton to have certain other qualities. Any cotton should be as free from waste as possible. The finer grades should be able to produce a strong yarn, whatever the lint qualities may be on which strength of yarn depends. Long staple cotton should show fineness and silkiness, and above all—the spinner tells us—it must be uniform.

Of all these qualities, length and uniformity of staple are the most tangible to the worker in the field and in the field laboratory. Uniformity of soil, and purity of type—to which I shall refer later—are important qualities in influencing the regularity of the staple. Apart from these factors, uniformity in the length of fibres on the seed can be influenced by seed selection and should always receive the cotton breeder's attention.

These and numerous other considerations, many of which are more or less antagonistic, complicate the task of developing superior new varieties of cotton. Repeated selection and testing are necessary. Time is an important element. It is impossible to get all the good things into one package, but with care and perseverance most of them, in the long run can be crowded in.

One of our problems, when we are testing new strains, is the difficulty of obtaining a satisfactory estimate from the manufacturer's point of view, of the relative value of a new product. Until the new strain reaches the stage of quantity production and we are able to sell bale lots on the market we cannot determine definitely how much better or worse the new type is than a standard variety with which we may be comparing it in the field.

We can ascertain fairly early in the life of a new strain the relative yield and other qualities which determine its merit from the grower's point of view. On the basis of our field tests we may find that a certain new cotton can be depended on to produce, we may say, five or ten per cent. more or less lint per acre than a standard variety. If the yield is five per cent. less, but the staple is longer and more uniform than the cotton commonly grown, then the important question is this: Can the grower depend on receiving from the trade as much as five per cent. or more in excess of the price of common cotton to pay him for switching to the new va-

riety? If not, it is certain that the grower will never adopt the new variety however excellent the character of the lint, because the planter can be depended on, naturally, to grow the kind of cotton which will pay him best.

It is important, therefore, to the cotton breeders to have their samples carefully valued early in the testing of a new strain, so that they may not waste their time unnecessarily long on unprofitable types.

Spinning tests which have been run for us on small lots of cotton through the courtesy of certain mills have not been entirely satisfactory because they have merely given certain data which are not particularly intelligible to the agriculturist. They have failed to supply the final complete estimate of relative merit.

Likewise the valuations given on samples submitted to cotton factors or brokers are not always satisfactory because they may not have had a recent sale of the kind of cotton in question and may not be in a position to give the desired information. Furthermore, the cotton classer bases his estimate of worth mainly on grade and staple and does not consider to any great extent—because they are difficult to detect—the finer points of character which may affect spinning value.

Pure Seed Supplies

Finally, the question of maintaining a supply of pure seed of superior varieties is of utmost importance. This is not strictly a plan breeding proposition because the origination of something new is not involved. It is a very vital and practical question, however, of almost equal importance with the problems of developing better varieties.

When a variety becomes widely cultivated the seed stalk of the average grower is sure to become contaminated. This contamination results partly from cross pollination effected by insects, but the principal source of trouble is the mechanical mixing of seed and of seed cotton at public ginneries. There is little hope of relief from this very frequent mixing of seed stocks and the most satisfactory remedy is the frequent renewal of seed stock by the grower after his cotton begins to deteriorate.

There must be a source of pure seed to which the grower may turn when in need of a new supply. Seed selection is useful in maintaining the purity of planting seed stocks. Either the deteriorated stock must be displaced by a new improved strain if one superior to the variety in use has been developed, or else, a purer stock of the old variety must be obtained.

In this connection, well organized and well managed seed farms can perform and to some extent are performing a very valuable service. It is up to the seed farms to make available adequate supplies of pure seed which will be needed by farmers from time to time. These seeds must either be of new improved varieties which have been developed recently or, in the absence of such new productions, they must be pure uniform stocks of satisfactory older varieties. This purity can be maintained by seed selection and isolation from other cottons together with scrupulous care in ginning. Properly equipped seed farms with trained and experienced specialists and with adequate facilities for experimental work are the proper agencies to render this service. The Experiment Stations are doing useful work in research and in developing new varieties, but they cannot be expected to supply more than a very limited amount of seed. The average farmer is not equipped by training nor with facilities for constantly producing an abundant supply of dependable seed.

I think I have pointed out to you some of the valuable service which seed selection has rendered to the cotton industry. I believe I may safely predict that from this time on still more substantial benefits may be expected from this class of work.

Crude Rubber Imports on Pacific Coast

According to recent statements made on the Pacific coast conditions are very chaotic and unsettled in the crude rubber industry. Harry Schwartz, the Seattle crude rubber broker, has commented on the situation and tells of the effect of the cut in steamship rates for shipments direct to New York. Mr. Schwartz maintains that this action has resulted in making it practically impossible to import rubber by way of Seattle and other Pacific ports on account of the high transcontinental rates which are in effect. This has tended to stifle competition with the Atlantic coast according to the statement.

Continuing, Mr. Schwartz says, "Another very important factor with which we have to contend is that most of the plantation crude rubber imported is bought on a basis of *c. i. f.* New York. In view of the lower rate direct to New York, shippers naturally wish to take this advantage of reducing their cost of doing business.

"This has made it rather embarrassing to importers who have sold futures ex dock Pacific Coast.

"The writer is keenly disappointed at the present state of affairs due to the inability of the Pacific coast manufacturers to secure their crude rubber purchases on this coast. Most importers now quote *c. i. f.* New York.

"When one considers that less than carload shipments from New York take from four to six weeks to reach a Pacific Coast manufacturer where formerly he could get his rubber in a week to ten days and add to that the freight which is about 400 per cent higher, manufacturers on the Pacific coast have become discouraged.

"My opinion is that the Port Commission of Seattle, through unfavorable methods of handling crude rubber, has caused a number of importers to divert their importations to other ports where they are sure of being handled properly and where they can at least have their own representatives look after the weighing, grading and sampling.

"The Port Commission has taken the attitude that they weigh, tare, stencil and recooper the importations of rubber or else the shipment would go forward to its destination without being properly attended to. This appears to me to be an arbitrary method to adopt in the handling of crude rubber.

"We know of one big importer who, rather than have his rubber handled by unskilled weighers, asked his agent here to put the rubber in a public warehouse. This was done, and the rubber weighed there. Can we expect that importer to bring his freight through here? I think not. After being put to an unnecessary expense of paying extra handling, trucking and storage charges, we cannot blame him for overlooking this port.

"In order for us to successfully compete with Atlantic Coast ports the following suggestions are made:

1. Reduce ocean freight charges.
2. Eliminate all dock charges. If the docks must tack on charges, have the railroads or steamship companies absorb them.
3. Do away with all *privilege charges.*
4. Load cars promptly.
5. Put the docks and warehouses on their mettle. Don't permit them to hold freight over the free period in order that they may advance storage charges against shipments. This has been a hobby with docks on the Pacific coast, particularly Seattle.

(*Continued on page* 161)

Census Information Required of Manufacturers*

The scriptural injunction, "Know Thyself," may soon be so paraphrased by the business man of the United States as to read, "Know Thy Business," as a result of a call to be made upon him probably in January by the polite, fairly patient but none the less persistent enumerator of the Census Bureau,

CONFIDENTIAL

Form 158

DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
SAM. L. ROGERS, DIRECTOR

CENSUS OF MANUFACTURES, 1919

EUGENE F. HARTLEY
CHIEF STATISTICIAN FOR MANUFACTURES

RUBBER GOODS
SUPPLEMENTAL SCHEDULE

NAME OF ESTABLISHMENT.....

NAME OF OWNER.....

LOCATION OF FACTORY. State..... County.....
Post office..... Street and No.....

1. **Products:** Give the quantity and selling value at the factory and account for all products and by-products manufactured during the year (whether sold or not). Do not duplicate products by including in this inquiry products manufactured but consumed in this establishment in further manufacture.

The total value of products in this schedule must agree with the total in the General Schedule.

KIND.	UNIT OF MEASURE.	QUANTITY.	VALUE.
Rubber goods:			
Boots and shoes—			
Rubber boots	Pairs		$
Rubber shoes and overshoes	Pairs		$
Canvas shoes with rubber soles	Pairs		$
Heels (include only those sold as such, or on hand)	Pairs		$
Soles, including composition or fiber (sold as such, or on hand)	Pairs		$
Tires:			
Pneumatic—			
Automobile—			
Casings	Number		$
Inner tubes	Number		$
Motor cycle and bicycle—			
Casings	Number		$
Inner tubes	Number		$
All other (specify kind)			
Casings	Number		$
Inner tubes	Number		$
Solid—			
Truck	Number		$
All other	Number		$

[OVER]

SCHEDULE TO BE SUBMITTED TO RUBBER MANUFACTURERS

who will request that said business man fill out two schedules, one general, the other supplemental. It might, therefore, be wise for the business man to anticipate such a visit by familiarizing himself to the fullest possible extent with all the details of his business, especially along the lines concerning which specific information will be sought.

For this reason, therefore, advance information is herewith furnished as to the data which the representative of the Census Bureau at Washington will call for. Under the general schedule for manufacturers there are thirteen general heads which are sub-divided in such way as to secure needed specific details, as follows:

1. Description of establishment.
2. Amount of capital actually invested—owned and borrowed.
3. Salaried employes, number, December 15, 1919, as per pay roll.
4. Wage earners, including piece workers: number, December 15, 1919, as per pay roll.
5. Wage earners, including piece workers: number, as per pay rolls or time rolls on the 15th day of each month, period covered by this report.
6. Total amounts paid in salary and wages during year covered by this report.
7. Time in operation and hours worked.
8. Rent and taxes paid or due for the year.
9. Materials, mill supplies and fuel, total cost of all used during the year covered by this report.
10. Products: value of products and work performed during the year.
11. Power: Mechanical power employed for manufacturing purposes.
12. Fuel used: The quantity of each kind of fuel used during the year.
13. Remarks.

It is important to bear in mind that the total value of products shown in the supplemental schedule must agree with the total in the general schedule.

In the supplemental schedule provided for rubber manufacturers, the name of the establishment, the owner, and the location of the plant, must be followed by details touching all kinds of rubber goods, including boots and shoes, rubber boots, rubber shoes, and other shoes, canvas shoes with rubber soles, heels, including only those sold as such or on hand; and soles including composition or fiber sold or on hand.

Under the heading of tires will come pneumatic, automobile, casings, inner tubes, motor cycle and bicycle casings and inner

1. **Products—Continued.**

KIND.	UNIT OF MEASURE	QUANTITY.	VALUE.
Rubberized fabrics (include only those sold as such, or on hand):			
Automobile and carriage	Yards		$
All other (specify kind)	Yards		$
Belting	x x x	x x x x x x x	$
Hose	x x x	x x x x x x x	$
Packing	x x x	x x x x x x x	$
Clothing	x x x	x x x x x x x	$
Druggists' and stationers' sundries	x x x	x x x x x x x	$
Hard rubber goods	x x x	x x x x x x x	$
All other manufactures of rubber	x x x	x x x x x x x	$
Reclaimed rubber (produced and sold as such, or on hand)	Pounds		$
All other products (specify kind)			$
			$
Total			$

2. **Remarks:** .....

REVERSE SIDE OF SCHEDULE

tubes, and all other kinds of casings and inner tubes. Under solid tires must be those listed for trucks.

As to rubberized fabric, they must be shown, automobile and carriage manufacturers and all others turned out, together with belting, hose, packing, clothing, druggists' and stationers' sundries, hard rubber goods, all other manufactures of rubber and reclaimed rubber.

As to each of these items the unit of measure must be indicated, whether in pairs, number, yard or pounds, together with the quantity and value.

Crude Rubber Imports on Pacific Coast

(*Continued from page* 160)

6. Extend importers and exporters the same courtesies they can get elsewhere.

7. Allow importers and exporters to employ their own weighmasters and laborers. This they can do on all docks and warehouses in the port of New York.

8. Treat the importers' and exporters' representatives the same way the dock operatives want to be treated when they go to a shop or factory to make a purchase.

"At the present time we have about twenty-five rubber manufacturers on the Pacific coast.

"If we continue to be favored with crude rubber importations, by all means let us handle them promptly and efficiently. By doing so we help our manufacturers."

* From Bureau of the Census, Washington, D. C.

Waste and Salvage in Rubber Factories—II*

By S. F. Kessner

Elimination of waste is one of the cardinal principles of modern manufacturing and is emphasized in practically every concern of importance throughout the country. Time was when little attention was paid to what was thrown aside, but in these days, when the cost of every item entering into production has increased inordinately, saving has become a positive virtue. Many firms derive their profits from the sale of their by-products and any factory can cut the cost of operation by a rigid adherence to the principle that nothing which retains the slightest vestige of utility be wasted or thrown away. Nowhere, perhaps, can this maxim be put to better advantage than in the rubber industry.

Waste in the calender room will undoubtedly occur unless steps are taken to prevent it. To this end care should be taken in handling the gum so that it is in the best of condition at all times. The floor under and in the vicinity of the calender should be clean and steps should be taken to see that it is free from dirt, oil and soapstone. Oil is often wasted and drips upon the floor both from the cog wheels and the sides of the calender. If this is not eliminated as far as possible there is grave danger that it will come into contact with the gum with disastrous results for the latter.

The calenders should also be equipped with meters in order to stop the over running of material. Sufficient material should be worked up for the work in hand and this should be checked by the meters so that excessive yardage will not be produced.

Wastage of Gum Unnecessary

The stretching of gum as it is run into the liners is another item which causes inconvenience. When this occurs the space should be reduced and care should be taken that the shell runs loosely enough to avoid pulling. This will save the stretching of the gum and will also eliminate the reducing of the gauge or the required thickness of the gum which will do away with the running of material over and above the amount required by order. In addition to this all liners should be free from wrinkles. This can best be avoided by not placing them on end on the floor, but by racking them and separating them sufficiently so that they will not come into contact with one another. This will do away with wrinkles as well as the compression of warm gum.

Truckers should exercise care in bringing gum from the mill room to the calender room, as it is an easy matter for a careless workman to allow the gum to come in contact with the injurious substances. Clean zinc boxes should be provided and these should be covered in order that the gum may be protected from foreign matter mixing with it as well as to keep it from falling upon the floor. In addition to this a like amount of care should be exercised in the belt room. Rolls should not be placed on end but should be deposited in a rack, each roll bearing a properly filled out tag on which is the number of the shift that was at work when the roll was racked.

The floors in the vicinity of the cutting machine should be clean and properly protected in order that no dirt be permitted to soil the fabric. Care should be exercised at all times and zinc boxes should be provided to hold the fabric so that it will not come in contact with the floor.

When stock is placed upon the belt table for make up, attention should be paid to the liner carrying the gum. When the liner is too far away there is danger of the gum being unnecessarily stretched when it is pulled out. Should this occur it would be well to reduce the space by having the liner held by a sliding carriage which should be brought up close to the head of the table so that the gum will not be pulled out more than a distance of forty or fifty feet. Over lengths should also be eliminated, for by doing this gum, fabric, time and labor will be saved and there will also be a reduction in the cost of handling at the heaters.

In the building of a belt there should be supervision when the cement is being applied. Frequently this is daubed on to excess, with the result that there is considerable wastage. This waste can be easily eliminated by supervision.

Saving in the Mechanical Room

In the mechanical rubber room, where rubber articles such as rings, washers, valve rings, pipe rings, gaskets and mats are made, the same rules regarding the handling of gum and liners should apply as have been previously mentioned. Rolls should be racked and tagged so that the date of racking and the shift by which it was done could easily be found. Of course it is assumed that all tags will be properly filled out with the number of compound, number of order, number of calender run, date and signature of the inspector in the calender room.

Layout tables should be carefully cleaned and, if possible, covered with a top of heavy tin. The article to be made should have the stock gum not more than a half inch oversize. Considerable gum is wasted by allowing three inches or more in oversize cuts to be made, and in order to obviate this feature the gum should be run as near the correct size as possible.

Care should be taken in mat making for gaskets; the construction should be carefully watched and the application of cement noted with a view to effecting a saving. When the articles are ready for the gum cover, particular care should be given to the process of cutting. Frequently the cutting is done purely by guesswork instead of by practical estimate. Care in this respect may take a little more time but it more than makes up by reason of the amount of wastage eliminated.

Labor Turnover Is Expensive

Considerable wastage occurs in the so-called labor turnover. Hiring and educating help is an expensive business and every step should be taken in order to make sure that the employe fully realizes the importance of his job. The worker should be thoroughly instructed in his respective duties and should recognize the responsibility that is his. He should know just what his work means and should know that he is directly responsible for any imperfections occurring in his particular process. The men should be interested in their work and their vision should be enlarged until they can realize what they can do by intelligent application.

The inspectors should be thoroughly competent and broad-minded and should be able to get the men under them interested in their work. This is merely a matter of education and the cost is insignificant when compared to the results obtained. The men will be more content and efficient and will be more able to act on their own initiative if properly educated with respect to their duties.

One good way of illustrating wastage in a department is a method that has been used by the writer with considerable effect. All of the waste that has accumulated in the department during a day is gathered together and placed where it can be easily seen by everybody. Explanation should then be made that the amount on exhibition is the wastage for one day and this should be followed up by an estimate of a week's wastage as well as the probable figures for a year. An ocular demonstration of this kind never fails to impress the workers and the reduction in the amount of waste material following it is soon noticed.

*Continued from October 10 issue.

Inner Tube Making Machine

The invention subject of this story, patented by the Goodyear Tire & Rubber Company, Akron, Ohio, relates to a machine for the manufacture of inner tubes for pneumatic tires and more particularly to a machine for forming inner tubes from a single sheet or ply of rubber. A principal object is the provision of a machine composed of component units which are adapted to treat a continuously moving rubber sheet in accordance with successive steps in the formation of an inner tube.

An elongated platform or series of table sections is arranged over which an endless conveyor belt travels. At one end of this structure is positioned the stock rack, from which the rubber sheet is fed from successive rolls on to the conveyor belt, while at the opposite end is located the forming and pressing mechanism which transforms the sheet into a continuous tube adapted to be cut up into suitable lengths to provide inner tubes. Between these terminal parts of the machine are located upon the elongated table and along the route of the conveyor belt, a number of mechanisms or appliances which are aranged to take care of the successive steps of washing, coating, and drying the edges of the rubber sheet, prior to its entrance into the pressing and forming mechanisms.

Aims of the Invention

The aims of the invention subsidiary of the main object are concerned with the provision of means for washing opposed bevelled edges of a moving sheet of material, a specific embodiment of which means may comprise rotatable brushes dipping into a bath or reservoir of the cleansing fluid; the provision of complemental means for applying an adhesive coating to the washed edges of the moving rubber strip; the provision of adjustable means for regulating the width of the edge zone of the sheet which is being treated; the provision of means to quickly dry the coated edges; and the provision of a shaping tunnel to continuously roll the flat sheet into a tubular form, in conjunction with a presser roll operating upon the gummed edges of the sheet to make them adhere to each other in tubular form.

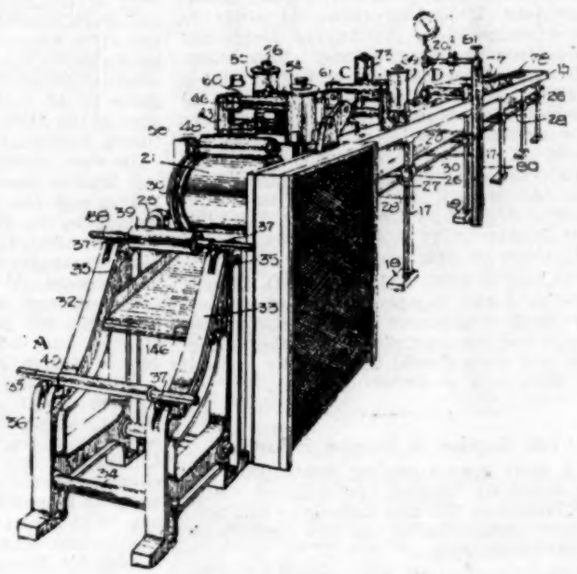
Further objects are means to withdraw the rubber blanks from the conveyor belt temporarily during treatment by the preparing mechanisms; to provide guides to return the rubber strip to the conveyor belt after passage through any of the treating appliances; to provide an endless support guide travelling with the belt to space the lower gummed edge of the rubber strip from contact with the conveyor means; to provide brush means to clean the belt itself; to provide suitable driving mechanisms for the belt, the endless guide, and certain of the rubber appliances; and finally to provide a control of the machine, such that it may be stopped by an operator stationed at any point along the route of the conveyor belt.

Manufactures a Continuous Tube

The machine is especially designed for the manufacture of a continuous tube from a continuous flat sheet or strip blank of rubber. These flat sheets or blanks are supplied to the machine in rolls, and both sides of the sheet are thickly coated with talc or a similar chalky powder to prevent the adhesion of the several layers composing a roll. Prior to being supplied to the inner tube machine, the lateral edges of the rubber strip are oppositely bevelled or skived in order that a more secure and less bulky seam or point may result from a lapping of the bevelled edge portions in the shaping tunnel, after they have been adhesively coated.

The thickly-powdered condition of the rubber strip precludes, however, the immediate application of a cement to the skived edges, which are later to form the tube seam, and for this reason the edges are first washed by the unit *B* before entering the cement coating appliance *C*. For both the washing and coating operation a rotatable member moves along each edge of the rubber strip and is semi-immersed in a reservoir containing a proper cleansing or coating fluid. After leaving these two primary units, *B* and *C*, the rubber strip passes, upon its conveyor belt through the quick-drying apparatus, which consists of a sectional tunnel heated by the steam pipes of the unit *D*.

Since the cement applied by the unit *C* to the bevelled edges of the rubber sheet must be comparatively fluid to facilitate its application, it is apparent that it must be dried to a considerable extent before the seaming operation is undertaken. The steam drying apparatus *D* evaporates the major portion of the moisture in the cement coating, but as it is difficult to



Inner Tube Making Machine

regulate the temperature to secure the proper degree of dryness on the part of the coated edges, the table is elongated between the steam drying apparatus and the shaping tunnel in order that the remaining moisture in the cement coating after the passage of the strip through the apparatus *C* may be naturally evaporated by contact with the surrounding atmosphere during its travel over that portion of the table separating the units *D* and the terminal unit. The natural evaporation of the edge coating depends mainly upon the two factors of the distance travelled and the rate of such travel, so that a relatively fine adjustment of the degree of evaporation is readily obtained from a combination of the forced evaporation provided by the steam tunnel and the natural evaporation gained by elongation of the conveying table.

The rubber strip having now been washed, coated and dried, enters the shaping tunnel, which automatically laps the bevelled gummed edges of the strips and feeds them under the press roll, completing the seaming operation. Upon issuing from the last named mechanism the achieved continuous cylinder may be cut up into suitable lengths for inner tubes.—(Patent No. 124,365, to Edward Charles Robert Marks, 57 and 58, Lincoln's Inn Fields W. C. 2) (A communication from Goodyear Tire and Rubber Co., 1144 East Market Street, Akron, Ohio.)

New Inner Tube Manufacturer

The Courier Rubber Company, Inc., recently incorporated, has opened sales offices at 150 Nassau street, New York City. The officers are young and progressive and have specialized in inner tubes in every department from the basic stage of rubber chemistry through the manufacturing and sales end. They are now pushing the sale of the Courier Red Floating Inner Tube, for they are convinced of the superiority of red tubes in general over gray tubes. The Courier Red is a non-blooming product. They have found that the sale of their red tubes greatly exceeds that of the gray, although the red commands a higher price than the gray. Both Courier Red and Courier Gray are guaranteed to have equally good physical qualities.

Numerous cases have come to the attention of the Courier Company in which the jobbers and dealers have been dissatisfied with their previous sources of supply because the dealers and jobbers themselves have demanded of the manufacturers, low-priced tubes, in order to meet competition. In buying low-priced tubes from the manufacturers, they naturally receive what they pay for. It is claimed that the tubes will stand all recognized tests as to tear, etc., including the well-known scissors test. From the point of view of physical qualities, their products are guaranteed as follows: Specific gravity .98 i. e. floating stock; tensile strength of from 2,500 to 3,000 lbs. per square inch; a stretch from 8½ to 9½ times its original length.

Robert E. Clift and William D. Laurie, president and vice-president, respectively, are both well-known men in the rubber trade and are men of unquestioned standing and they should undoubtedly succeed in their new undertaking

Los Angeles to Finance Industries

A sum approximating $10,000,000 will be voted by leading Los Angeles, Calif., business men for the purpose of financing infant industries in the Los Angeles industrial district.

The organization, with power to underwrite new business enterprises which are knocking at the door of Los Angeles and have been denied entrance because of lack of sufficient funds, will be formed, according to Watt L. Moreland, president of the Chamber of Commerce, by the leading business interests of Los Angeles, with the idea of making this city the financial center of the largest industrial center west of Chicago.

The decision to fortify Los Angeles with an industrial organization which would be able to bring to this city scores of infant industries that heretofore have been obliged to remain dormant was reached recently at a conference at the Chamber of Commerce. It was reported by the secretary of the industrial bureau of the chamber that approximately 100 prospective industries that really possessed merit were seeking to locate in Los Angeles and vicinity, and that conditions were ideal for their success. The drawback, however, seemed to be that they were capable of financing themselves only in the initial stages. This led to a recommendation by Mr. Moreland that an underwriting organization be formed with a capital which would run to possibly $10,000,000, this sum to be used in the financing of such industries until they were on a paying basis.

"Rubber, cotton and clay products," said Mr. Moreland, "are the leaders in the industries that are seeking to locate in Los Angeles. The coming of the Goodyear plant to this city has resulted in scores of inquiries from manufacturers of rubber products. It has been pointed out to them that all conditions are ideal here for the establishment of their plants, but with the question of financial help the propositions have fallen through. The new organization will prevent this.

"Next in line has been inquiries from the manufacturers of cotton goods. It is generally conceded that with the establishment of the concentration rate in Los Angeles and the granting of the differential in favor of Los Angeles against Seattle this city will become the cotton center of the United States. Far-seeing men have naturally sought to locate their center of industry here, but again the lack of sufficient funds has proven a stumbling block and the city has been the loser."

Fifth Annual Tractor Show

Arrangements have been made with the Kansas City Tractor Club whereby members of the Motor and Accessory Manufacturers Association are to participate in the Fifth Annual Tractor Show to be held in Kansas City from February 16-21 inclusive, 1920. This announcement was made by M. L. Heminway, General Manager of the Motor and Accessory Manufacturers Association.

In view of the great progress made in the tractor industry within the last few years, and the nation-wide interest evidenced in the National Tractor Show, it was decided by the Directors of the Motor and Accessory Manufacturers Association to add this exhibition to the list of sanctioned shows. Applications and diagrams will be forwarded to members shortly, and indications point to a large representative number of exhibitors.

The following are the shows sanctioned by the Motor and Accessory Manufacturers Association: New York (both passenger and truck shows), January 3-10; Chicago (both passenger and truck shows), January 24-30; Minneapolis, January 31-February 7; Kansas City, February 16-21; Boston, March 13-20. This is the largest number of shows ever sanctioned by the Association for any one year.

Applications for space already received for the New York, Chicago and Boston shows are exceeding all previous records, both in the number of exhibitors and the amount of space applied for.

Rubber From the Philippines

The Philippine Islands as the source of America's future crude rubber supply is predicted by foresighted men of the rubber industry. In a recent statement, F. A. Seiberling, president of The Goodyear Tire and Rubber Company declared that if importation of coolie labor was allowed in the Philippines, enough crude rubber would be produced to make America independent of relying on importations from other countries.

Goodyear Blameless in Dirigible Accident

The Goodyear Tire and Rubber Company of Akron has been exonerated from all blame for the dirigible disaster in Chicago in July, in which 13 persons were killed when the aircraft crashed through the roof of a bank. A clean slate was given the Goodyear Company by a jury of technical experts and the coroner's jury.

The jury recommended that flying over cities be prohibited. Owing to conflicting testimony, the jury was unable to fix the blame for the accident. The action of the Akron concern in adjusting civil liability was commended.

Rubber Firm for Oakland

That California is fast becoming a rubber metropolis is shown by the fact that factories for the manufacture of tires and rubber goods are springing up throughout the state. One of the most recent firms to begin operations in that section of the country is the Coast Tire and Rubber Company, which has recently purchased factory sites in Oakland and will begin the erection of a plant within a short time. The company is a new one organized in California by experienced automobile tire men and capitalized at a million dollars.

The factory which has been planned will have a capacity for 300 tires and 500 tubes per eight hour day and this output will be increased to 900 tires and 1,500 tubes by operating continuously for twenty-four hours. It is also planned to add a factory for the purpose of manufacturing rubber goods for the marine trade.

The organizer of the new company is Holmes Ives, who was manager of the Chippewa district of the Wisconsin-Minnesota Light and Power Company for four years and was, until he took up the formation of this company, secretary and sales manager of the Boone Tire and Rubber Company. Interested with Mr. Ives are Harold Geisse, one time secretary of the Wisconsin state railroad commission and now assistant to the vice-president of the Middle West Utility Company of Chicago; W. D. Forbes, an industrial chemist of many years' experience; N. B. Campbell, assistant cashier of the First National Bank of Oakland; N. J. Whelan, industrial commissioner of the Wisconsin-Minnesota Light and Power Company, and president of the U. S. Auto Gear Shift Company, and a director of the Gillette Tire and Rubber Company of Wisconsin; John P. Pancratz, sales manager for eastern Wisconsin of the Boone Rubber Tire Company.

Eclat Rubber Increases Plant

(Special Akron Correspondence.)

The Eclat Rubber Company will have its new plant at Cuyahoga Falls ready for operation by the first of the year, it is announced. The new plant is two stories high with 5,000 square feet on the first floor. Tubing for mechanical purposes, rubber accessories for automobiles and inner tubes will be among the products.

The officers and directors of the concern are men who have had a broad experience in the rubber industry. Nearly all are well-known in Akron and vicinity and have been connected with the large rubber companies in some way. W. H. Stillwell, president, was salesmanager of the Allen Machinery Company, Erie, Pa., for several years. J. A. Seabold, vice-president, was with the B. F. Goodrich Company for twenty-nine years. C. C. Crumrine, general manager, has been in the rubber business for twenty-six years, and E. F. Ast, secretary and treasurer, has had almost as broad an experience. C. E. Reiss, who has had a wide range of experience in the chemical branch of the rubber industry, will be the production chemist, with H. C. Simons, chief engineer.

The Board of Directors met on November 20. It is composed of W. H. Stillwell, J. A. Seabold, C. C. Crumrine, E. F. Ast, C. E. Reiss, W. E. Weldon, salesmanager of the Lincoln Electric Company, Cleveland; S. W. Sweet, president of the Electric Motor and Repair Company; R. S. Whitright and W. A. Heffelman, both of the Electric Motor and Repair Company.

News from the Rubber Metropolis

Record Business for Goodyear—Addition to Goodrich Plant—Akron Dealers to Visit Cleveland—Mason Sales Show Large Increase—Akron Stock Quotations—Fine Arts Club in Akron

Record Business for Goodyear

(Special Akron Correspondence.)

With another record year for sales just ended, officials and employes of the Goodyear Tire and Rubber Company have set $250,000,000 for their total sales goal for the fiscal year ending October 31, 1920. This was the keynote of President F. A. Seiberling's address at the annual meeting of Goodyear stockholders which was held in the offices of the company on Monday, December 1.

This business, Mr. Seiberling predicted, will be made possible as a result of great prosperity throughout the nation. It will lead to increased production in the Akron plant and will include the business which will be handled by the Goodyear factory now being built in Los Angeles, Cal., after its opening June 1, 1920.

Total sales reported by Goodyear by the past fiscal year were $168,914,982.83 as compared with $131,247,382.45 for the preceding twelve months.

Profits of the company during the year just ended were $23,277,245.29 which are subject to federal taxes. A year ago the report showed profits of $15,388,190.74 before taxes. The report shows an unappropriated surplus of $33,332,666.41, subject to federal taxes for the year. The company has 47,983 employes of whom 28,681 are connected with the Akron plant.

F. A. Seiberling was re-elected president and general manager; C. W. Seiberling, vice-president in charge of purchases; G. M. Stadelman, vice-president in charge of sales, and P. W. Litchfield, vice-president in charge of production; W. E. Palmer was re-elected treasurer and also was named to the secretaryship, succeeding A. F. Osterloh, former secretary, who has become general manager of the new Los Angeles plant; H. J. Blackburn, assistant treasurer, and H. H. McCloskey, second assistant treasurer.

W. D. Shilts was elected assistant secretary.

F. A. Seiberling, C. W. Seiberling, G. M. Stadelman, F. H. Adams, P. W. Litchfield, H. B. Manton and J. P. Loomis were elected members of the board of directors.

There were several outstanding features in Mr. Seiberling's report to the stockholders, among the more important being:

The amounts of current assets and liabilities are materially higher than shown in the statement of 1918, due to the fact that production at the close of this year was running more than double the amount of the preceding year at its close.

The general audit of the Goodyear Company's finances shows that the company holds $3,405,800 in Liberty bonds, and that the company advanced $1,880,328 to the Goodyear Improvement Company, and the Goodyear Heights Realty Company.

Addition to Goodrich Plant

(Special Akron Correspondence.)

The B. F. Goodrich Company has taken out building permits for a $90,000 factory addition, 372 x 240, and a refrigerator building, 60 x 45, to cost $16,000.

Akron Dealers to Visit Cleveland

Three hundred representatives of the automotive industries in Akron will go to Cleveland in a body, Thursday, December 4, accompanied by the uniformed hands of the Goodrich, Firestone and Goodyear rubber companies to attend the state convention of automobile dealers.

The party will leave early in the morning in six chartered cars and will be met at 9th and Prospect streets, in Cleveland by a platoon of the Sixth City police force. They will form a parade marching order and proceed down 9th street to Superior and serenade the newspaper offices near the Hollenden Hotel after which they will go to the convention hall at the chamber of commerce building on the square.

The delegation going to Cleveland will carry proper insignia to show they are from Akron.

Goodrich Net Earnings

(Special Akron Correspondence.)

Estimates of net earnings of the B. F. Goodrich Rubber Company for the current year are placed at $16,400,000 before taxes. This would mean about $24 per share for common stock. Last year before allowing for federal taxes the company earned slightly more than $23 a share on the common.

The company's net working capital has increased from $27,000,000 in 1915 to $43,000,000 at the close of last year. It is figured that Goodrich has added $70 a share to the value behind its common stock in the last five years.

Mason Sales Show Large Increase

Sales of the Mason Tire and Rubber Company for its third fiscal year, ending October 31, 1919, amounted to $3,468,858.52, with net profit of $223,705.52. This is an increase of about fifty per cent over the preceding year's totals. Sales for the second fiscal year of the company, ending October 31, 1918, were $2,324,144.00, with net profit of $203,436.81, and sales for the first fiscal year amounted to $1,213,859.00, with net profit of $104,457.00.

During the last few months the Mason Tire and Rubber Company has opened ten additional direct factory branches in the United States, and now has eighteen direct factory branches in operation, giving national distribution. The Mason goal is $7,000,000 of sales during the present fiscal year.

Goodyear to Exhibit Balloons

Indications now point to one of the biggest aeronautical exhibitions ever held in this country, in the show to be held in the Coliseum at Chicago during the week of January 8, 1920. The big manufacturers of aeronautical supplies are recognizing the exhibition as a wonderful educational opportunity and are supporting the project generally. One of the recent applicants for space is the Goodyear Tire and Rubber Company, which built more than 1,000 balloons for the government during the war. This company will exhibit a full line of balloons at Chicago.

Akron Stock Quotations

(Special Akron Correspondence.)

The Akron rubber stock market was fairly stable during the middle of November. Goodrich and Kelly-Springfield common slid down with other issues during the break on the New York Exchange, but soon recovered a good part of their losses, although both are well under the high marks established several weeks ago.

Firestone common sold up to 205, but dropped back to 200. Portage common added two points on small sales. Standard Tire dropped from 242 to 170 after a forty per cent stock dividend was declared.

Following are the quotations on November 19:

	Bid.	Asked.
Amer. R. & T., com.	65	...
do. pfd.	105	...
Amazon Rubber	100	105
Firestone, com.	199	201
do. 6 per cent pfd.	98	99
do. 7 per cent pfd.	98½	100
General, com.	500	...
do. pfd.	101	...
Goodrich, com.	80	83
do. pfd.	104	104½
Goodyear, com.	418	423
do. 1st pfd.	111	112
India Rubber	210	220
Kelly Springfield	141	143
Mason, com.	25	...
do. pfd.	...	82
Marathon, com.	...	55
Miller, com.	215	225
do. 1st pfd.	103	104
do. 2d pfd.	103	104
Mohawk, com.	320	...
do. pfd.	100	110
Phoenix, com.	22	25
do. pfd.	90	95
Portage, com.	130	136
do. pfd.	94	96
Republic, com.	5¾	6¾
do. 1st pfd.	...	95
do. 2d pfd.	87	92
Rubber Products	133	133
Star Rubber, com.	350	450
do. pfd.	97	99
*Standard Tire	170	...
Swinehart, com.	96	100
do. pfd.	92	...

* Ex. Dividend.

Fine Arts Club in Akron

When a fine arts club was recently organized in Akron, Ohio, it was found that there were nearly fifty artists, of unusual ability, employed in the art departments of the rubber industries. The Goodyear Tire and Rubber Company pays $50,000 annually for art in oils, water colors and sketches that go to make up designs for cover pages in five house publications and to illustrate folders, pamphlets, posters and advertising.

Goodrich Gives Bonus

(Special Akron Correspondence.)

Announcement by the B. F. Goodrich Rubber Company that additional compensation equal to twenty-five per cent of their annual pay will be given all salaried employes this year, is expected to be followed by similar announcements from other local companies. The Goodrich expects to pay out approximately $2,500,000 under this plan. About 5,000 employes are affected.

The official announcement from the Goodrich directors says:

"Believing that the conditions which justified an additional payment to the salaried employes of the company during the year 1918, such existed during the past year to such an extent as to once more warrant unusual recognition, the Executive Committee has determined that each salaried employe on Dec. 1, 1919, shall receive additional compensation for services rendered and to be rendered equal to twenty-five per cent of the total salary paid to each such employe during the year 1919.—The Executive Committee."

Victor Rubber Adds to Plant

The Victor Rubber Company of Springfield, Ohio, is in the midst of an extensive building schedule which is constantly increasing the production of Victor tires. Early in the year of 1919, the first building in the new program was completed. The cord tire department is just now being moved into the second building. Besides this, a large addition is under construction which will house a battery of new vulcanizers.

These structures will provide over 25,000 additional feet of floor space and will enable the organization to double the production of Victor tires.

All of the structures in the new factory plan are of uniform construction, hollow tile, entirely fireproof, light, perfectly ventilated, and modern in all respects. For the past several months the plant has been operating at capacity of twenty-three hours a day with three shifts.

Fred Stone in Rubber Business

Announcement has recently been made to the effect that Fred Stone, the popular comedian, has acquired substantial holdings in the Pennsylvania Rubber Company, of Jeannette, Pa. Mr. Stone, who is perhaps America's most popular and versatile stage favorite, also owns an office building and other valuable real estate in New York City, so that his present venture may be regarded as being an unusual move on his part.

Minneapolis Show Sanctioned

Announcement has been made by M. L. Heminway, general manager of the Motor and Accessory Manufacturers' Association, that arrangements have been made with the Minneapolis Automobile Trade Association, whereby members of the M. & A. M. A., will participate in the show to be held in Minneapolis from January 31 to February 7.

After a careful survey of the plan and jurisdiction of the Minneapolis show, it was determined to sanction it because of the important territory covered. The automobile men of the Twin Cities are making special efforts to make the Minneapolis show one of the most important exhibitions in the history of the industry in the Middle West.

Los Angeles to Be Highway's End

Since Goodyear located the big western factory in Los Angeles, Cal., interest has been stimulated in the establishment of a branch of the Lincoln Highway leading from Ely, Nev., to Los Angeles, a distance of 770 miles. Ely is the first big town reached after crossing the great desert section of the Great Salt Lake country.

F. A. Seiberling, president of the Lincoln Highway and of the Goodyear Tire and Rubber Company, considers Los Angeles a logical terminus of the great transcontinental highway and suggests that the new spur of this highway should run to Oasis by way of Tonopah and Goldfield, then through the Owens River and Antelope Valleys to Los Angeles. This would mean 500 miles in California and 270 in Nevada. The Automobile Club of Southern California has already signposted the entire route and with the backing of this organization and that of the Lincoln Highway Association, it is expected that both the states of Nevada and California will construct their portions of the Ely-Los Angeles highway.

Difficulties of Motor Taxation

That the work of devising a new plan for state motor taxation is not easy may be gathered by the following article by Eugene M. Travis, Controller of the State of New York, which appeared recently in the "New York Tribune." The article is as follows:

Various ingenious schemes have been put forward for taxing gasoline and tires, instead of the present scheme—horsepower only. Regarding horsepower, nominal or actual, it is probably the most unsatisfactory standard to take as a basis. Experts themselves are still groping to find a satisfactory basis upon which the power of the internal combustion engine can be calculated.

Taxation by weight alone has not proved satisfactory, for whether the matter be looked at from the point of view of the ability to pay, of the mileage covered in the year or of the destructive qualities of the vehicle upon the road, weight alone is a very imperfect guide. Over a century ago the laws of England recognized this and it was provided that toll should vary in accordance with the width of the tire. The effect was to encourage broad tires, for there is nothing more destructive than the heavily laden narrow steel tired vehicle.

There are precedents, therefore, for varying taxation so as to encourage broad tires on vehicles designed to carry heavy loads. The question is one that should be considered in resurveying the problem of motor car taxation. A combination of factors, however, must be considered to ascertain how different methods should work.

A gasoline tax would be difficult to carry out in practice. Gasoline is used in many other trades and it would obviously be unfair to tax for purposes totally unconnected.

If tires were taken as a basis great difficulties would present themselves. A broad tire does infinitely less harm to the roads than a narrow one, and pneumatic tires are admitted to be less destructive than those of solid rubber, which in turn are better from the road point of view than plain iron or steel.

It is impossible, however, to insure that any tax shall be absolutely fair in all its incidents, but by levying the several taxes above suggested no class of traffic could escape payment of some share larger than at present toward road up-keep. However, any change in the present system will provoke strenuous opposition, but it is clear that if the system of taxation for road up-keep is altered a new system of road management will also before long become inevitable.

Finally, the question of taxation for road purposes is, moreover, bound up with the reform of local taxation, generally and the whole question of the appropriations made by the Legislature toward local expenditures. To sum up the arguments, however, an effort has been made here to show that a larger share of the expenses of road up-keep should be paid by the actual road user whether mechanical or horse-driven vehicles.

Wood Opens Chicago Office

Charles E. Wood, dealer in crude rubber at 149 Broadway, New York City, has recently opened an office in the Advertising Building, 123 West Madison street, Chicago. The new office will be in charge of Clinton Tavenlere who for the past nine years has been identified with the Goodyear Rubber Company of New York in the capacity of salesman.

New Rubber Plant in Mansfield

A recent addition to the industries of Mansfield, Ohio, is the Perfect Rubber Company which has erected a plant at Wayne and Fifth streets for the manufacture of toy and advertising balloons. The personnel of the new firm contains a number of well known business men of the city and is as follows: C. H. Voegele, president; E. O. Townsend, vice-president; J. M. Pitney, secretary and general manager; F. M. Bushnell, treasurer; J. S. Heil, general sales manager, and John H. Link, assistant general manager and chemist.

Manufacturing has already started and it is expected that all departments will be in operation within a few days. An employer's committee will be formed to look after welfare and social work and an entertainment program will be held throughout the winter. A cafeteria and rest rooms for employes have also been established.

Mid-Continent Chemist Resigns

Dr. Ernest A. Wullenweber, who for the past year and a half has been consulting chemist of the Mid-Continent Tire Company and has also served as assistant general manager of the company, resigned October 31.

As an evidence of the appreciation of Dr. Wullenweber's splendid service, he was presented with a handsome watch by the office staff employes of the company. Philip Paterson, chief chemist, made the presentation speech.

Dr. and Mrs. Wullenweber and son Ernest, Jr., will leave soon for the East where Dr. Wullenweber has accepted a very responsible post.

Ajax Rubber to Build

In line with its intention of erecting a new factory it is now revealed that after many offers of factory sites in different sections of the country the Ajax Rubber Company, Inc., has finally chosen Jackson, Mich., as the home for its third plant. This new addition to the company's facilities and equipment will be in operation, it is expected, by July 1, 1920. That it will be, moreover, a substantial addition to the organization as a source of increased production is shown by the fact that 1,500 workmen will be employed and the daily output of automobile tire casings will total 2,500. Work on the buildings will be started this Fall and the total building cost is estimated at $750,000.

Balloon Company in California

A twenty thousand dollar permit for the factory to be erected at Riverside, Calif., by the Pacific Balloon Company, has been taken out by J. Stanley Wilson, architect and superintendent of construction.

The building is to be one story high and will contain 10,000 square feet of floor space.

Construction work is to be rushed as President Dodge and Secretary Fullerton are anxious to start manufacturing operations at the earliest possible moment. Architect Wilson said that he hoped to have the building ready for use soon after the first of the year.

Twenty thousand dollars worth of machinery to be used in making balloons and other rubber devices has been ordered and is already en route to Riverside.

One million balloons a month are to be manufactured at the start and forty-five workmen will be employed it is stated.

Changes in Firestone Organization

The appointment of C. H. Gerhold, formerly of the western division of cycle tire and accessory sales, to be manager of the new tire accessory sales department of the Firestone Tire & Rubber Company, is announced in a bulletin from that corporation. His new territory will comprise the entire country. Among his many friends Mr. Gerhold is recognized as one of the leading authorities in the country on tire accessories and their use, and they predict for the new department of Firestone undoubted success. Mr. Gerhold has been with Firestone for fourteen years; he has been in the cycle tire and accessories sales work since its inception. Firestone is said to be one of the three largest manufacturers of tire accessories in the country.

Firestone announces the appointment of H. P. McWilliams to the important position of cycle tire sales manager, coincident with the consolidation of the eastern and western sales division of the motorcycle and bicycle tire sales departments. In this new and important division of the Firestone selling organization, both trade sales and manufacturers sales promotion will come under the jurisdiction of Mr. McWilliams. During his association with the Firestone organization, which has extended over a considerable period, Mr. McWilliams has established a wide acquaintance and an enviable reputation in the trade.

A recent acquisition to the selling organization of Firestone is George W. Keller, who becomes special representative of the new cycle tire sales department. Mr. Keller will make his headquarters at Chicago and his territory will embrace several states, including such important cities as Chicago, Minneapolis, Milwaukee, Davenport, Des Moines, St. Paul, Duluth, Fargo, Great Falls and Minot. Mr. Keller has been identified for a number of years with the rubber interests and has specialized in sales promotion work. He has been actively identified with the leading events of the motorcycle industry for the past few years and has many friends in the trade in all parts of the country.

G. and J. to Extend Plant

Deeds to practically the entire block of property from Cook street to Noble street and from Louisiana street to Georgia street, Indianapolis, Ind., were recorded by the G. and J. Tire Company. Improvement of the plant and additions have already been started on this land. When these additions are completed the payroll of the plant, according to W. B. Harding, president of the company, will be $75,000 a week.

The deeds, thirty-one in all, were recorded in the name of the United States Rubber Company, the parent organization of the Indianapolis plant. The G. and J. Company manufactures motorcycle tires and inner tubes for automobiles.

New Factory Head for Fort Wayne

The Fort Wayne Tire and Rubber Manufacturing Company has announced the appointment of B. E. Lorentz, of Jeannette, Pennsylvania, as general factory superintendent, because of the great success he has already attained, not only as an executive, but also in improving automobile tires and tubes.

Organizes Distributors Tire Company

Owen Moynihan, for the past two years General Sales Manager of The Amazon Rubber Co., of Akron, has resigned his position to assume the active management of the new Malay Rubber Co. The Malay Rubber Company is being organized by distributors and dealers in all parts of the country for the purpose of manufacturing a high grade tire and merchandising it along the lines that the distributors and dealers shall determine.

Mr. Moynihan before his Amazon connection, was Eastern District Representative of two of the Akron Rubber Companies and preceding that time he was in the offices of distributors. In the Malay Rubber Company will be associated

OWEN MOYNIHAN

with him tire experts to care for every phase of manufacture, production, sales and advertising.

The Malay Rubber Company will build a complete new plant in Cleveland, where a diversified labor market, and ideal transportation and living facilities will assist in keeping down production costs. Executive offices have been opened at 1,035 Guardian Bldg., Cleveland, O.

Appointment of a Field Secretary

Because of the rapidly expanding work of the Motor and Accessory Manufacturers Association, it has been found necessary to appoint a field secretary to travel about the country and keep in direct personal touch wtih the various members.

M. L. Heminway, general manager of the Association, has announced that Alexander W. Barber, formerly connected with the Credit Department of the Irving National Bank of New York City, has been selected for this important work.

By training and experience Mr. Barber is unusually well equipped for his new work with the Motor and Accessory Manufacturers Association. With the Irving National Bank of New York City he handled a great many of the important accounts in the automotive industry. Prior to that he was a member of the inspection department of the New York Life Insurance Company.

Mr. Barber will not only keep in touch with the credit managers of the various companies of the Association, but with the other executives as well. By this direct contact the Association will obtain greater cooperation from its members and receive the benefit of constructive suggestions for carrying forward the important cooperative work for the advantage of the entire industry.

The membership of the Motor and Accessory Manufacturers Association has been increasing at an unprecedented rate within the last few months. The full roster includes more than 300 companies, manufacturing motors, parts, tires and accessories for the automotive industry, or an increase of more than twenty-five members since July last. A number of other applications for membership are also now pending.

Goodyear to Enlarge Detroit Warehouse

G. M. Stadelman, vice-president of the Goodyear Tire & Rubber Company, of Akron, Ohio, is authority for the statement that the company does not intend either to move its general offices to Detroit or build a branch manufacturing plant in the city, as has been reported in industrial circles lately. Mr. Stadelman's statement is as follows:

"The Goodyear Tire & Rubber Company has maintained a wholesale warehouse, together with district and local offices, in Detroit for the last twelve years. The building which housed these operations is located at Jefferson avenue and St. Antoine street.

"Our business has outgrown these quarters and we acquired a tract of land on East Grand Boulevard for the purpose of erecting a building suitable to our present and near future requirements. We have no intention of building a branch plant in Detroit, nor have we any idea of establishing our general offices in that city."

Erie Tire to Build Plant

Reports current at the present time indicate that there will be a change in the personnel of the officials of the Erie Tire and Rubber Company, of Erie, Pa. It is stated that plans are now under way to bring this about and as soon as this and the necessary financing have been accomplished, which is expected within a few weeks, work on the construction of the factory group will be started.

The factory, which will be built to the east of the city, will aim at the production of 1,000 tires a day and, in addition to tires, tubes will be made. Additional buildings will be erected when the need arises. It is furthermore stated that the production of the plant for the first two years has been contracted.

J. Frederick Seiberling, who recently resigned from the vice-presidency of the New Castle Tire and Rubber Company, will be the general manager, according to the report which further states that A. G. Seiberling, general manager and vice-president of the Haynes Automobile Company, will be associated with him.

Addition to Gates Plant

The Gates Rubber Company have two new units to their factory under construction. This great increase was made necessary by the introduction of Gates Double Mileage Tires. Instead of eight acres of floor space there will be fourteen when the new units are completed. The number of employees will be increased from 1,600 to about 2,100.

American Rubber Patents

ISSUED NOVEMBER 18, 1919

1,321,188—To Homer Catucci, New York, N. Y., assignor to Mabie, Todd & Co., New York, N. Y. Self-filling fountain-pen.

1,321,220—To Estas H. Layman, Pacific Beach, Calif. Vehicle-tire.

1,321,229—To Thomas Midgley, Springfield, Mass., assignor to The Fisk Rubber Co., Chicopee Falls, Mass. Combined mold and fluid-bag.

1,321,301—To Willis A. Gibbons, Flushing, N. Y., assignor to Rubber Regenerating Company, Ind. Pneumatic-cushion.

1,321,402—To Benjamin L. Stowe, Jersey City, N. J., assignor to Morgan & Wright, Mich. Method for making pneumatic tires.

1,321,403—To Benjamin L. Stowe, Jersey City, N. J., assignor to Morgan & Wright, Mich. Huachuca, Ariz. Cushion-tire.

1,321,404—To Benjamin L. Stowe, Jersey City, N. J., assignor to Morgan & Wright, Mich. Apparatus for making pneumatic tires.

1,321,466—To August J. Meyer, Chicago, Ill. Tire.

1,321,494—To John E. Thropp, Trenton, N. J., assignor to The De Laski and Thropp Circular Woven Tire Company, Trenton, N. J. Fabric-laying attachment for tire-making machines.

1,321,530—To Angus S. MacDonald, Great Neck Station, N. Y. Method of making tubing.

1,321,545—To Charles A. O'Neill, Revere, Mass., assignor to Demountable Spring Tire Co., New York, N. Y. Resilient wheel.

1,321,556—To John K. Ross, Chicago, Ill. Pneumatic tire.

1,321,688—To Thomas J. Whalen, Kittanning, Pa. Tire.

1,321,888—To George J. Clayton, Lakewood, N. J. Demountable rim.

1,321,921—To Jesse Pruett Jacobs, Shelbyville, Tenn. Demountable rim-holder.

1,321,961—To Herbert K. Wheelock, Chicago, Ill., assignor to Western Vulcanizing Manufacturing Co., Chicago, Ill. Vulcanizer.

1,321,992—To John N. Disselkoen, Duval, Fla. Tire-guard for wheels.

1,322,070—To Michael Stefanski, Detroit, Mich. Resilient-tire.

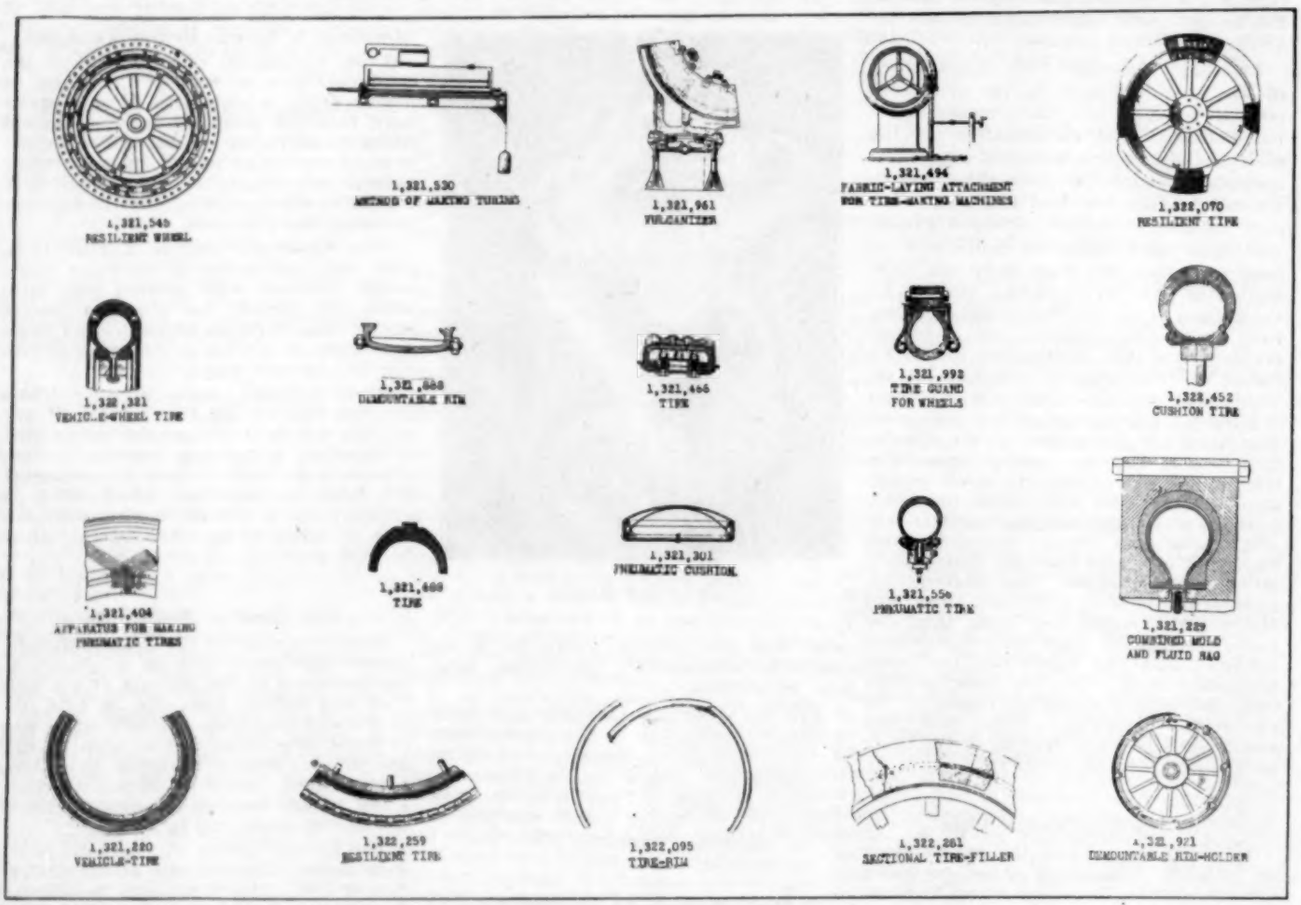
1,322,095—To Charles B. Deeds, Savanna, Ill., assignor by mesne assignments to Lightning Change Rim Corporation, Berrien Springs, Mich. Tire-rim.

1,322,259—To Clyde S. Morse, De Kalb, Ill., assignor of one-half to Stella S. Morse, De Kalb, Ill. Resilient-tire.

1,322,281—To Fred L. Bailey and John H. LaGrant, Wichita, Kans. Sectional tire-filler.

1,322,321—To Thomas C. McEwen, Belleville, N. J. Vehicle-wheel tire.

1,322,452—To Christopher C. Joy, Fort Huachuen, Ariz. Cushion-tire.



Cotton Crop Estimated

An estimate of the cotton crop of 1919-20 recently issued by A. Norden and Company, of New York, N. Y., gives the approximate total for the United States for the above mentioned period at 10,400,000 bales. In this estimate two round bales are counted as one, exclusive of linters. The estimate in bales by states for 1919-20 is as follows: North Carolina, 800,000; South Carolina, 1,350,000; Georgia, 1,700,000; Alabama, 650,000; Mississippi, 900,000; Louisiana, 350,000; Texas, 2,500,000; Oklahoma, 800,000; Arkansas, 850,000; Tennessee, 300,000, and sundries, 200,000.

Roumania Seeks Tires and Goloshes

The Commercial Secretary at Bucharest, A. A. Adams, reports that there is an active demand in Roumania for solid rubber vehicle tires and rubber goloshes. The pre-war trade in rubber carriage tires in Roumania was about equally divided between the United Kingdom and Germany, but Mr. Adams is of the opinion that there is no reason why this state of affairs should continue as there are firms in Roumania only too anxious to get hold of these goods if manufacturers are in a position to supply. He also considers that a footing secured now in this market means a privileged position in the trade in the future. As regards rubber goloshes, United Kingdom manufacturers do not appear to manufacture to any extent the styles required in Roumania. There is a unique opportunity for traders to enter the Roumanian market upon very favorable conditions. It would appear that the main factor is the supply of the goods and price is subsidiary to this consideration, although if too high it will necessarily limit the volume of trade to be done. The annual trade in goloshes should normally be about $500,000.

St. Louis Tire Dealers Meet

An all day meeting of Star tire dealers of the St. Louis district was held November 20, at the salesroom of Zerweck, Grayson & Company, distributor for Eastern Missouri, Southern Illinois and Arkansas, with more than 100 dealers in attendance. During the meeting a cord tire was built by Archie Wilson, a factory expert sent here for that purpose. R. J. Delavan, Western sales manager for the Star Rubber Company, made the principal address to the dealers. He explained the sales and advertising policy of the Star Rubber Company for the coming year and conducted a forum in which the dealers outlined the principal points of sales resistance they encountered and the means to overcome them.

The meeting was concluded with a dinner at the American Annex Hotel, at which officials of the Zerweck, Grayson Company made talks.

MARKETS

Manufactured Rubber Goods

NEW YORK, November 25, 1919.

Reports from all quarters of the rubber industry tell of continued good business, and the market is apparently on the high road to more prosperity. Many of the larger companies are interesting their employes in the welfare of their companies by selling them stock on special terms, and in this manner a satisfied working force is being formed that will prove impregnable to the inroads of the more radical elements of labor.

Production of rubber goods is constantly expanding, new companies coming into the field for the manufacture of goods already being produced, and for the development of specialties whose manufacture had been held up by the war. Many large companies and still more smaller ones are entering the field, and the infusion of this new blood promises to put the industry in a still healthier condition. Some of the new tire retreading companies now being formed are not too well regarded by established houses, but time will eliminate the unfit.

TIRES

Production of automobile tires is keeping pace, and in fact, a step ahead of automobile production. In 1906, there were only about 48,000 automobiles registered in the entire United States. At present, there are more than 6,000,000.

Tire production during the past ten years has kept step with the increased production of automobiles, and is now getting ahead. Figures compiled by well-rated statisticians show that during the past ten years the expansion in the tire manufacturing industry has totaled nearly 1,000 per cent, the increase in invested capital being from $15,000,000 to $150,000,000.

Annual sales of one of the leading tire manufacturing companies have increased from about $4,000,000 in 1908 to $131,000,000 in 1918, and the company in question expects to do over $150,000,000 this year. The consumption of tires in the United States is estimated at from 20,000,000 to 30,000,000 annually, and with this production constantly on the increase, tire manufacturers are expanding to take care of the increased business.

While demand for tires is becoming seasonably more quiet with the advent of colder weather, producers are not slowing down, but are storing up tires for the heavy demand anticipated for next year.

MECHANICAL GOODS

Demand for belting is still hampered somewhat by the epidemic of strikes which is tying up business throughout the country. Many mines, usually good buyers of belting, are suspended because of labor difficulties, and practically the entire steel industry is tied up by the strike of steel workers.

A good inquiry for marine specialties is reported however, and with new ships constantly being put in commission, the outlook in this branch of the market appears to be a favorable one. The railroads, as yet, have not come into the market for any supplies.

It is believed that export buying of belting would be fairly brisk at the present time, should the exchange situation ease off, but as conditions stand today, many orders are being withheld by possible purchasers abroad because of the ruinous rates of exchange which make goods purchased in this country cost two or three times what they would in normal times.

MISCELLANEOUS PRODUCTS

Rubber manufacturers are still doing a brisk business in miscellaneous rubber products. The rubber heel industry is still a flourishing one, with demand keeping ahead of production pretty consistently. Many new lines of rubber heels are being introduced to the market. Rubber and composite soles are also meeting with a better demand.

Rubbers, boots, and arctics are meeting with a good sale and the first big snow is expected to go a long way towards cleaning out stocks now held by retailers. The army sales have disposed of a good part of the surplus holdings of the War Department, and no further Government competition is looked for in this branch.

Rubber fabrics of all kinds are meeting with a good call, manufacturers of raincoats reporting a good business. In addition, rubberized fabrics are being used for making valises, brief cases, bags, coats, and many other articles.

DRUGGISTS' SUNDRIES

With the market apparently on a more settled basis, a good buying movement of druggists' sundries has set in, according to reports received from dealers. Many retail druggists are laying in fairly heavy supplies to be prepared for any emergency rush of business, such as set in last year with the outbreak of the epidemic of influenza.

Surgical specialties are meeting with a good demand, both at home and abroad. There is a good volume of business being done in surgical goods for shipment abroad, the unfavorable exchange rates not serving as a bar to purchases of this sort, which are of the most essential kind.

Cottons, Yarns, and Fabrics

NEW YORK, November 25, 1919.

The market has been generally quiet and has remained unchanged during the past fortnight, due principally, it is believed, to the absence of speculative trading in the local market. Speculators were driven to cover and forced to close out their holdings to a great extent a few weeks ago when call money rates were advanced by the banks in an effort to stop speculation. Many cotton speculators must have been badly burnt at this time, for they have not returned to the market in any great force.

The undercurrent, however, continues strong and prices hold up fairly well. Manufacturers are reported to have covered their requirements for some time to come, and as a result, the market is devoid of this usual support and buying has not been heavy. Higher grades have been well sold up for some time, and holders who have any of the top grade cotton can obtain almost any price for their holdings.

The Census Bureau report issued in the middle of the month reported ginning of 7,577,826 bales of cotton, against 8,706,420 bales at the same time in 1918. The ginnings were much larger than had been expected by the trade in general, in view of the unfavorable conditions prevailing at present.

Much of the stock now being offered by the South is reported to be off-grade, the finer grades of cotton having been well sold up by growers. Domestic users of the staple are taking the better grades whenever obtainable but will soon be forced to use the off-color stock. Export demand is a negligible feature at this time, but it is believed that should trading in cotton for shipment abroad increase, as in all probability it will do if the treaty of peace is ratified within the immediate future, the market would again resume its advance.

The market on middling uplands cotton at the close on November 24 was quoted at 39.05. Futures were held at: January, 35.73; February, 34.60; March, 33.93; April, 32.95; June, 31.85; July, 31.50; August, 30.50; September, 29.85; October, 29.30; December, 36.98.

SEA ISLAND COTTON

No reports of any increased yield of Sea Island cotton have been received, and growers of the long staple are witnessing the increase of the demand for their product while they are unable to keep production up to the levels of former years, due to a combination of weather and insect damage. The annual production of Sea Island cotton previous to 1916 is given by the Department of Agriculture at 90,000 bales, the production in 1916 reaching a total of 117,599 bales. Production has fallen off sharply since that time, however, totaling only 92,619 bales in 1917, and 52,208 bales last year. Estimates of the 1919 crop place the probable yield at only 25,000 bales.

EGYPTIAN COTTON

American consumers are meeting with much foreign competition in securing Egyptian cotton this season. Many European countries are going into the market for Egyptian rather heavily this season, due to the poor American crop. A late cable from Alexandria reports a good crop, the General Produce Association being quoted as estimating the 1919 yield of Egyptian cotton at 6,000,000 cantars.

against 4,826,000 cantars last season. The increase is the result of increased acreage, the Government having restricted planting in 1918.

AMERICAN-EGYPTIAN COTTON

A good yield of American-Egyptian cotton is forecasted for this season, and tire manufacturing companies have already contracted for a large portion of the crop. The market generally speaking remains steady.

TIRE FABRICS

An active inquiry for tire fabrics is reported and manufacturers are having difficulty in getting supplies. With a shortage of needed grades of cotton, manufacturers of the fabric are unable to get enough raw materials but are working at capacity. Demand for the fabric this season is the strongest in the history of the industry and prices hold firmly on the quoted basis.

HOSE AND BELTING FABRICS

A fair demand for ducks and other hose and belting materials is reported, and the market shows a steady tone. Manufacturers of belting are taking materials in a moderate way, but are not operating to capacity due to the curtailed demand for their product occasioned by the many labor disturbances throughout the country.

DRILLS, SHEETINGS, AND OSNABURGS

The market has shown a somewhat stronger tone, and there is a good demand. Sheetings are firmly held at 31 and 31½ cents for 20 inch 2.50s; 27½ cents for 40 inch 2.85s; 26 cents for 40 inch 3.60s; 21 cents for 40 inch 4.25s; and 23 cents for 40 inch 3.75s. Drills hold firm at 22½ cents for 37 inch 3.95s; 26 cents for 37 inch 3.50s; 27 cents for 37 inch 3.25s; 28¼ cents for 27 inch 3.00s; 29½ cents for 37 inch 2.75s and 23 cents for 37 inch 2.35s.

BURLAPS

A continued good demand for burlaps is reported, and the market is holding firm. Demand is reported chiefly for the heavier grades, but there is a moderate demand for the lighter weights.

TIRE FABRICS

17¼-ounce Sea Island, combed,	sq. yd.	1.40@1.55
17¼-ounce Egyptian, combed		1.20@1.30
17¼-ounce Egyptian, carded		Nominal
17¼-ounce Peelers, carded		.85@ .90
17¼-ounce Peelers, combed		1.05@1.15

DUCKS

Single Filling (pound bases)	lb.	Nominal
Double Filling (pound basis)		Nominal

DRILLS

37-inch 2.35-yard	yd.	.32 @	.....
37-inch 2.75yard		.26 @	.26½
37-inch 3.00-yard		.24 @	.24½
37-inch 3.25-yard		.24 @	.....
37-inch 3.50-yard		.27 @	.....
37-inch 3.95-yard		.21 @	.....
37-inch 2.00-yard Southern		Nominal	
37-inch 2.00-yard Northern		Nominal	
40-inch 2.40-yard Southern		Nominal	
40-inch 2.40-yard Northern		Nominal	
52-inch 1.90-yard Southern		Nominal	
52-inch 1.90-yard Northern		Nominal	

SHEETINGS

40-inch 2.35-yard	yd.	..... @	.....
40-inch 2.50-yard		.29 @	.30
40-inch 2.85-yard		.26½ @	.27
40-inch 3.00-yard		.24½ @	.25
40-inch 3.25-yard		.22½ @	.23
40-inch 3.75-yard		.21½ @	.....
40-inch 3.60-yard		.24 @	.....
40-inch 4.25-yard		.18½ @	.19

***Note.*—In view of the unsettled conditions prevailing in the market at the present time, the prices quoted above are more or less nominal, and are not guaranteed.**

BURLAPS
(Carload lots)

		Cents Per Yard	
7 -ounce 40-inch		Nominal	
7½-ounce 40-inch		Nominal	
7½-ounce 45-inch		Nominal	
8 -ounce 36-inch		..... @	.....
8 -ounce 40-inch		13.75@	14.00
8½-ounce 40-inch		..... @	.....
10 -ounce 36-inch		..... @	.....
10 -ounce 40-inch		17.35@	17.50
10 -ounce 45-inch		Nominal	
10½-ounce 40-inch		17.75@	18.00

Chemicals and Compounding Materials

NEW YORK, November 25, 1919.

Short supplies and a firm market are reported in practically all lines of chemicals and compounding materials. The demand on many lines is stronger at the present time than ever before at this season of the year, and manufacturers and producers are working to capacity to keep up with their business. Manufacturers are being forced to curtail production in many lines, due to the coal shortage, and shipments are also being interfered with to a great extent by the taking off of many freight trains by the various railroads due to the inability of the roads to obtain sufficient quantities of fuel.

Export business is generally quiet at this time and business is held up to a large extent by the low position of the exchange markets, while high prices contribute their share to the dearth in export orders. It is believed in many sections of the trade that German competitors will get much of the European business in chemicals and compounding materials due to the failure of Congress to ratify the treaty.

LITHARGE ACTIVE

The market is sold up well ahead and producers report a record-breaking demand for their product, consumers continually coming into the market for more litharge. It is believed that many consumers are endeavoring to stock up ahead so as not to be caught without supplies should the demoralization of the freight service become worse, but whatever the cause, producers have contracted for all their production for many weeks to come. The market for American powdered in casks continues quoted on the basis of 9¾ and 10½ cents per pound. Quantity prices are as follows: 100 lb. kegs, up to 500 pounds, 13.50 cents; 500 lbs. to 2,000 lbs., 12.15 cents; 2,000 lbs. to 10,000 lbs., 11.84 cents; 10,000 lbs. to 30,000 lbs., 11.43 cents; carlots, minimum 15 tons, 11.30 cents.

LITHOPONE FIRM

A steady consuming demand for lithopone is noted and the market holds firm on the basis of 7 cents per pound. Thus far, rumors of increased prices have proved unfounded, although producing costs are continually soaring. Producers are generally sold up to March 1, 1920.

ORANGE MINERAL SCARCE

Supplies of orange mineral are reported insufficient to take care of the large volume of business which is offering. The market is firmly maintained at 13¼ to 13¾ cents per pound. Added to the heavy domestic demand, which alone exceeds production, there is an active export inquiry current. Higher prices are forecasted by some factors in the market.

BENZOL SCARCE

Benzol is in exceedingly small supply, and the market is strongly held on the basis of 34 and 35 cents per gallon for pure white. The trade is interested in the Longworth bill now before the Senate, which imposes a licensing system on imports of benzol and other chemicals. In the meantime there is an active call for benzol which producers are unable to fill wholly.

WHITING PRODUCTION INCREASES

The production of whiting has increased somewhat during the past few weeks, due primarily to heavier receipts of chalk from abroad. The market is quoted nominally unchanged, with a heavy demand reaching sellers.

BARYTES DELIVERIES BEHIND

Producers of barytes are far behind in their deliveries at the time of writing, due to the heavy demand which has swamped them during the past few months, and which has taxed their resources to the limit. Leading producers are now expanding the scope of their activities and expect to be in a position to take care of a greatly increased volume of business in the near future. It is believed that production will increase steadily after the first of the year. In the meantime, prices continue unchanged as quoted in the table appended below.

GLUES IN DEMAND

The market holds steady under a fair consuming demand. Prices are firm at 35 and 44 cents per pound for extra white; 30 and 35 cents for medium white; 25 and 36 cents for cabinet; 20 and 25 cents for low grade cabinet, and 13 and 18 cents for foot stock.

DRY COLORS FIRM

A steady demand for the general list in dry colors is reported. Blacks hold firm with carbon gas somewhat firmer at 12 and 35 cents per pound. Producers are reported as being behind on deliveries. Blues are, generally speaking, firmly held. The steady consuming demand for browns is keeping the market firm and prices are unchanged. Greens are stronger, with stocks particularly of chemically pure light. Producers of reds are behind in their deliveries and this color shares in the firmness of the general market. Yellows are strongly held. The market for colors in oil has held steady during the fortnight just closed with a fair routine consuming demand on all lines.

Current Prices for Chemicals, Fillers, Colors, etc.

Acetone, carlots	lb.	.13½ @	.14
Smaller lots	lb.	.15 @	.16
Accelerator, in drums	lb.	.85 @	1.00
Acids, Acetic, 56%	cwt.	6.00 @	6.50
Carbolic, C. P	lb.	.12 @	.13
Muriatic, 20 deg.	cwt.	2.00 @	2.25
Muriatic, 22 deg.	cwt.	2.50 @	2.75
Nitric, 42 deg.	cwt.	7.00 @	8.00
Nitric, 40 deg.	cwt.	6.75 @	7.50
Sulphuric, 60 deg.	ton	17.00 @	18.00
Tartaric, crystals	lb.	.79½ @	—
Aluminum Flake	ton	29.00 @	31.00
Aniline oil, bulk basis, Contract		— @	—
Imported		Nominal	
Domestic		.34 @	.36
Antimony, metal spot	lb.	.08⅝ @	.08¾
Oxide		.09½ @	.11
Sulphuret, red	lb.	.25 @	.30
Sulphuret, golden	lb.	.30 @	.35
Sulphuret, crimson	lb.	.48 @	.50
Needle, powdered	lb.	.09 @	.10
Asbestos	ton	35.00 @	45.00
Asphaltum, Egyptian	lb.	.16 @	.20
Domestic	ton	22.00 @	30.00
Barium sulphate, technical	lb.	.04½ @	.05
Sulphide	lb.	07¼ @	.07½
Barytes, prime white imported	ton	Nominal	
white, domestic	lb.	.30 @	.31
off color, domestic	lb.	.21 @	.24
Southern, f.o.b. mills		21.00 @	—
Western, f.o.b. mills		21.50 @	—
Benzol, pure, bulk	gal.	.35 @	.37
Beta-naphtol, sublimed	lb.	.55 @	.65
unsublimed	lb.	.50 @	.62

Blacks, Drop .....lb.	.05½	@	.15
Ivory .....lb.	.16	@	.30
Carbon, gas, cases..lb.	.12	@	.25
Lampblack, R. M...lb.	.15	@	.45
Mineral blacks.....ton	35.00	@	45.00
Blues, Prussian .....lb.	.70	@	.75
Soluble .....lb.	.70	@	.80
Ultramarine .....lb.	.70	@	.80
Browns,			
Umber, Turkey, burnt, powdered .....lb.	.05	@	.06½
American, burnt....lb.	.03½	@	.04
Cadmium sulphide, yellow.lb.	1.50	@	1.75
Carbon, disulphide, bulk.lb.	.06	@	—
tetrachloride drums.lb.	.11	@	—
Caustic Soda, 76@78%cwt.	3.25	@	3.50
Chalk, precipitated, extra light .....lb.	.05½	@	.06½
light .....lb.	.05	@	.06
heavy .....lb.	.05½	@	.06
China clay, domestic...ton	8.50	@	20.00
imported .....ton	18.00	@	23.50
Fossil flour.....lb.	.03¾	@	.05
Gilsonite .....ton	47.50	@	60.00
Glue, extra white.....lb.	.35	@	.40
medium .....lb.	.30	@	.35
low grade.....	.20	@	.25
foot stock	.13	@	.18
brown foots	.12	@	.16
common bone	.11	@	.15
Glycerine, C. P. (drums)lb.	.21	@	.21½
cans	.23	@	.23½
second hands	—	@	—
Graphite, flake (bbl.)...lb.	.14	@	.25
powdered (bbl.)....lb.	.05	@	.10
Green, chrome, R. M....lb.	.35	@	.40
Ground glass (fine).....lb.	.03½	@	.04
Hexamethylene .....lb.	.90	@	1.00
Infusorial earth, powd'd.lb.	.02	@	.035
bolted .....lb.	.035	@	—
Iron oxide, red, reduced grades .....lb.	.07	@	.08
red, pure, bright...lb.	.15	@	.20
Lead, red, dry (casks)..lb.	.10¼	@	.10½
sublimed .....lb.	.09¼	@	.09¾
white, basic carb...lb.	.09	@	.09½
white, basic sulp...lb.	.08¼	@	.08½
Lime flour.....lb.	.01¾	@	.02
Litharge (casks) .....lb.	.09¾	@	.10½
English .....lb.	*.12	@	.13
Lithopone, domestic,bbls.lb.	.07	@	—
in bags .....lb.	.06⅞	@	—
Magnesia, carbonate....lb.	.12½	@	.13½
calcined light.....lb.	.65	@	.75
Magnesite, calcined,pwd.ton	50.00	@	65.00
Mica, powdered.....lb.	.04¾	@	.05
Naphtha, motor gasoline, (steel bbls.)..gal.	.23½	@	—
68 @ 70 degrees (steel bbls.) .....gal.	.30½	@	—
70 @ 72 degrees (steel bbls.) .....gal.	.31½	@	—
73 @ 76 degrees (steel bbls.) .....gal.	.33½	@	—
machine (wood bbls.).gal.	.36½	@	—
Oil corn, crude factory..lb.	.18½	@	.19
corn, refined (bbls.).lb.	24.56	@	—
linseed (bbls.)	1.80	@	—
in carloads, spot.....	1.77	@	—
tank cars	1.82	@	—
Oil palm, Lagos.....lb.	.16¾	@	—
Niger .....lb.	.15¾	@	—
pine, yellow .....gal.	.87	@	—
rapeseed, refined...gal.	1.50	@	—
rapeseed, blown....gal.	1.60	@	—
rosin, first rectified.gal.	.91	@	—
second run	.94	@	—
tar (commercial)..gal.	.36	@	.38
Orange mineral, American.lb.	.13¼	@	.14¼
imported .....lb.	.15	@	.20
Paraphenylenediamine ..lb.	2.90	@	3.40
Petrolatum, bbls., amber.lb.	.07½	@	.08
pale yellow .....lb.	.06	@	.07
Pine tar kiln.....bbl.	14.50	@	—
Pitch .....bbl.	8.50	@	—
Plaster of paris.....bbl.	2.00	@	3.00
Red Tuscan .....lb.	.22	@	.30
red (American) ...lb.	.14	@	.16
Indian (English) ...lb.	.14	@	.16
Standard .....lb.	.12	@	.16
Rosin (common to good)— 280 lbs. .....bbl.	17.00	@	—
Rotten stone, powdered.lb.	.02½	@	.04½
Rubber, substitute, black.lb.	.13	@	.17
white .....lb.	.15	@	.24
brown .....lb.	.20	@	.25
Shellac, fine orange.....lb.	—	@	—
T. N. .....lb.	1.15	@	1.20
Bleached, ordinary.lb.	1.50	@	—
Bleached bonedry...lb.	—	@	—
Silex (silica).....ton	22.00	@	40.00
Soapstone, powdered...ton	12.00	@	17.50
Starch, corn, powd....cwt.	5.62	@	—
pearl	5.37	@	—
Jap. potato .....lb.	.09⅝	@	.09⅝
Sulphur, crude.....ton	*50.00	@	—
100 pounds.....	3.20	@	4.25
roll	2.70	@	3.15
commercial superfine..	2.50	@	—
Talc, American.....ton	20.00	@	40.00
French .....ton	*30.00	@	35.00
Toluol, pure, in drums.gal.	.32	@	.35
commercial	.22	@	.27
Tripolite earth .....lb.	.01⅛	@	—
Turpentine, pure gum— spirit .....gal.	1.67	@	—
wood .....gal.	1.63	@	—
Venice, artificial .....gal.	.14	@	.15
true	4.50	@	—
Vermilion, English .....lb.	1.60	@	1.65
American	.25	@	.30
Wax, beeswax, crude yel.lb.	.44	@	.45
refined	.47	@	.48
Bayberry	.50	@	.55
ceresin, white .....lb.	.16	@	.17
yellow	.14	@	.15

* Boiled, 5 barrels or more, 2c. extra. Double boiled, 5 barrels or more, 3c. extra.

Scrap Rubber

NEW YORK, November 25, 1919.

A quiet market for scrap rubber is reported, and the market is nominally unchanged. Manufacturers are temporarily out of the market, as the shortage of coal is already being felt in many industries since the inception of the strike.

A fair routine demand for some lines is noted, however, small stocks of inner tubes finding a market.

	Cents per pound.		
Boots and shoes.....	8.25	@	8.50
Arctics, trimmed	6.00	@	6.25
Arctics, untrimmed	4.75	@	5.25
Tires—Automobile	4.00	@	4.50
Bicycles, pneumatic	2.50	@	3.00
Mixed hose	1.25	@	1.75
Air brake	2.75	@	3.00
Inner tubes, No. 1.....	20.00	@	21.00
Inner tubes, No. 2.....	10.00	@	11.00
Red tubes	9.50	@	10.00

Crude Rubber

NEW YORK, November 25, 1919.

A continued fair demand for crude rubber is reported, and the market holds firm. Buyers are reported bidding about half cent under the market on most varieties. Of general interest is the announcement that the Goodyear Tire & Rubber Co. has just put through a single shipment of 8,000,000 pounds of crude from New York to its plant; the rubber being shipped in 70 car trains. This is the largest shipment of rubber in the history of the country, and is expected to supply enough raw material for the manufacture of 600,000 tires.

Advices from primary markets continue strong, with an active market reported in most producing districts. A strong market in London is also reported, a Nov. 11 report reading: "Plantation grades ruled quiet and easier, with prices showing a decline from ¼d. to ½d. on balance; first crepe on spot and November sold at 2s. 5½d. and 2s. 5¼d."

	Cents per pound.		
Para—Up-river fine	50	@	50½
Up-river medium	51	@	51½
Up-river coarse	35	@	
Caucho ball	35	@	
Islands fine	48	@	....
Islands coarse	21½	@	....
Cameta	24	@	....
Madeira fine	62	@	....
Knapsack	73	@	....
Ceylons—Smoked sheets, ribbed.	50	@	50½
Smoked sheets, plain.....	50½	@	51
First latex pale crepe.....	52½	@	53
Clean brown crepe.....	54	@	....
Rio Nunez string.....	55	@	....
Palembang	14	@	....
African	33	@	....
Prime Surinam sheets.....	1.02	@	....
Centrals—Corinto prime.....	35	@	....
Esmeralda, prime	35	@	....
*Balata sheets	1.00	@	....
Guayule, wet	27	@	....
Balata, block, Panama.....	57	@	....

* Nominal.

Market for Tires in United Kingdom

Manufacturers in a position to export motor-car and motorcycle tires should find the British market worthy of attention at the present time. Makers of cars and cycles are faced with what is termed by some authorities on the subject as a "tire famine." It is realized that the tire shortage is world-wide, but it is evidently much more acute in Europe than on the American continent. Central Europe was prevented by the blockade from importing rubber to any appreciable extent during the war, consequently, present and future demands of its people are likely to accentuate the general "famine", and to create an unprecedented call for both the raw material and the finished article.

In the United Kingdom it is reported that the output of cars and cycles is seriously impeded by the dearth of tires, and no immediate relief appears to be in sight. The growers of rubber, although in a position to ease the situation, are hampered by the meagreness of shipping facilities, and it is anticipated that many months must elapse before the factories can expect appreciable relief in the way of raw material. Growers and tire manufacturers realize also that the demand for motor vehicles being so much greater than it was in 1914, production on a pre-war basis will not solve the problem. More raw material must be produced, if the supply is to keep pace with the demand.

New Gates Fan Belt Exhibited

A new V shaped fan belt made its appearance at the Chicago Automobile Equipment Show, November 3-8, for the first time. A new belt that, it is said, will grip the pulleys positively; will not slip or stretch and will do its work almost without tension.

In presenting this new product the manufacturer says: "This V belt embodies a patented scientific process in belt construction. This belt has been tested by scores of my engineers time and again."

The Gates Rubber Company, of Denver, Colorado, who have originated and added this article to their list of Vulco-Cord products claim to be the largest manufacturers of fan belts in the world. They also make Gates Half-Sole Tires and Gates Double Mileage Tires. Their belt business was built largely on their standardized Vulco-Cord flat fan belt, which is the factory equipment now used on both the Fordson and Moline tractors. Gates has standardized this belt and eight or nine sizes will fit most any make or model of car. This belt was also on display at the Chicago Show.

Phoenix Rubber Enlarges

(Special Akron Correspondence.)

An addition to the plant of the Phoenix Rubber Company is being erected. It is 120 by 60 feet and will cost $60,000.

Address of L. E. Henneman Wanted

Information regarding the whereabouts of L. E. Henneman is desired by THE RUBBER AGE in view of the fact that mail addressed to him has been received at this office. Any information as to his present location will be greatly appreciated.

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